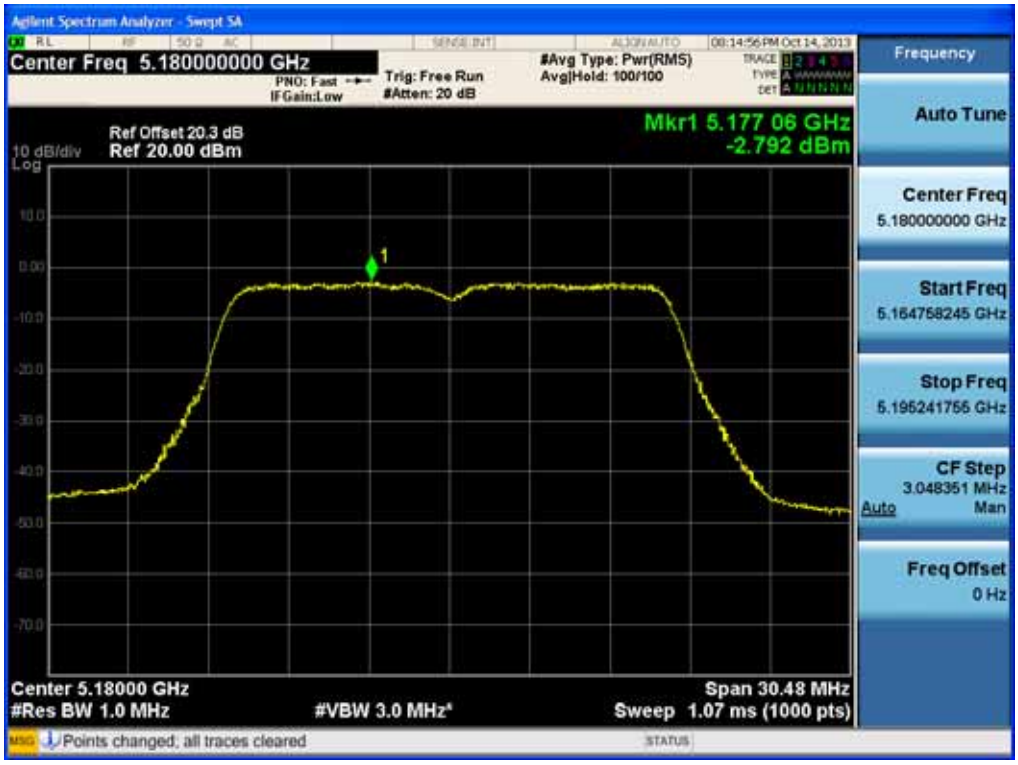
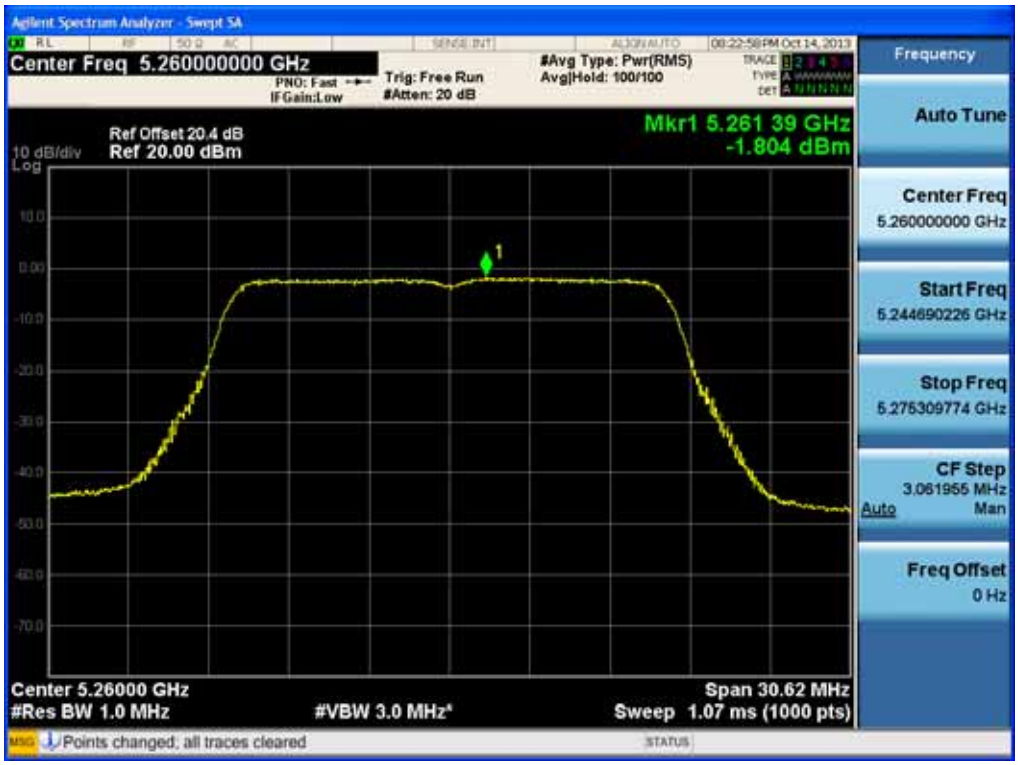
▣ RESULT PLOTS

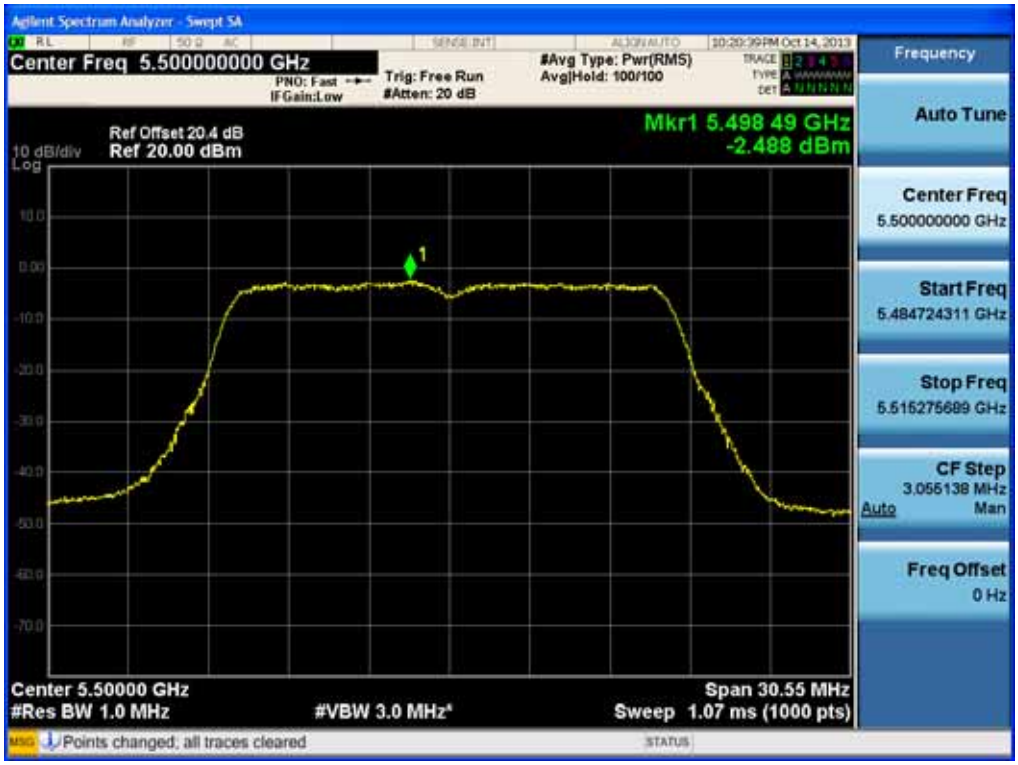
Power Spectral Density (802.11a-CH 36)



Power Spectral Density (802.11a-CH 52)



Power Spectral Density (802.11a-CH 100)



20 MHz BW

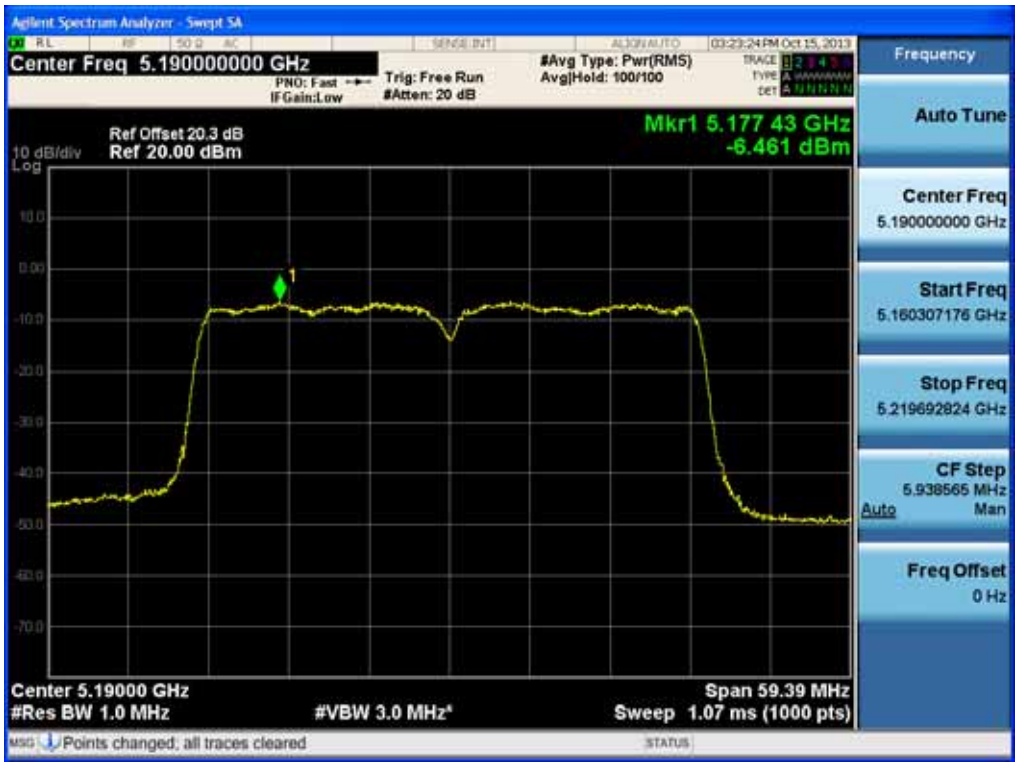
Power Spectral Density (802.11n-CH 40)

Power Spectral Density (802.11n-CH 52)

Power Spectral Density (802.11n-CH 116)

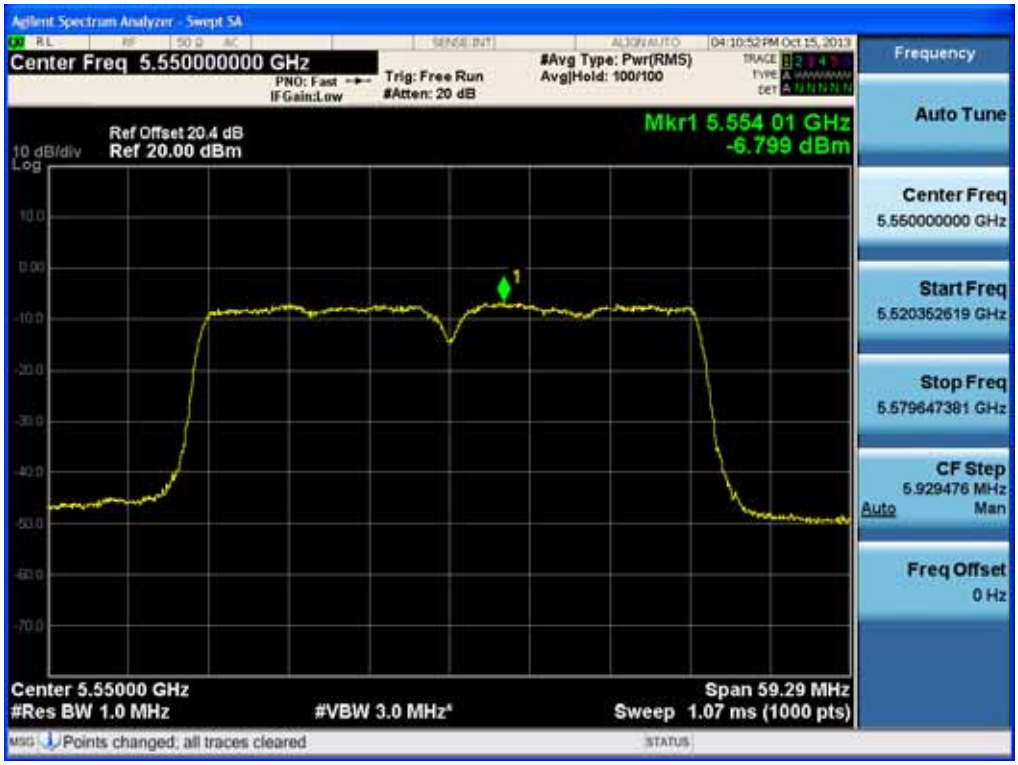
40 MHz BW

Power Spectral Density (802.11n-CH 38)



Power Spectral Density (802.11n-CH 54)

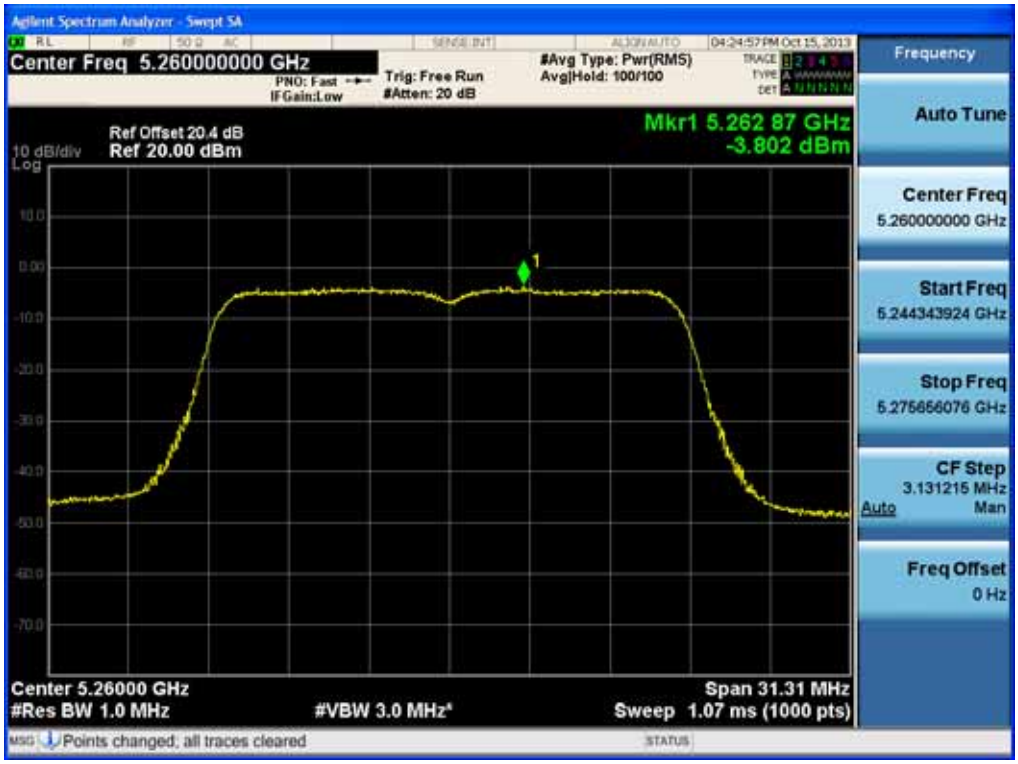
Power Spectral Density (802.11n-CH 110)



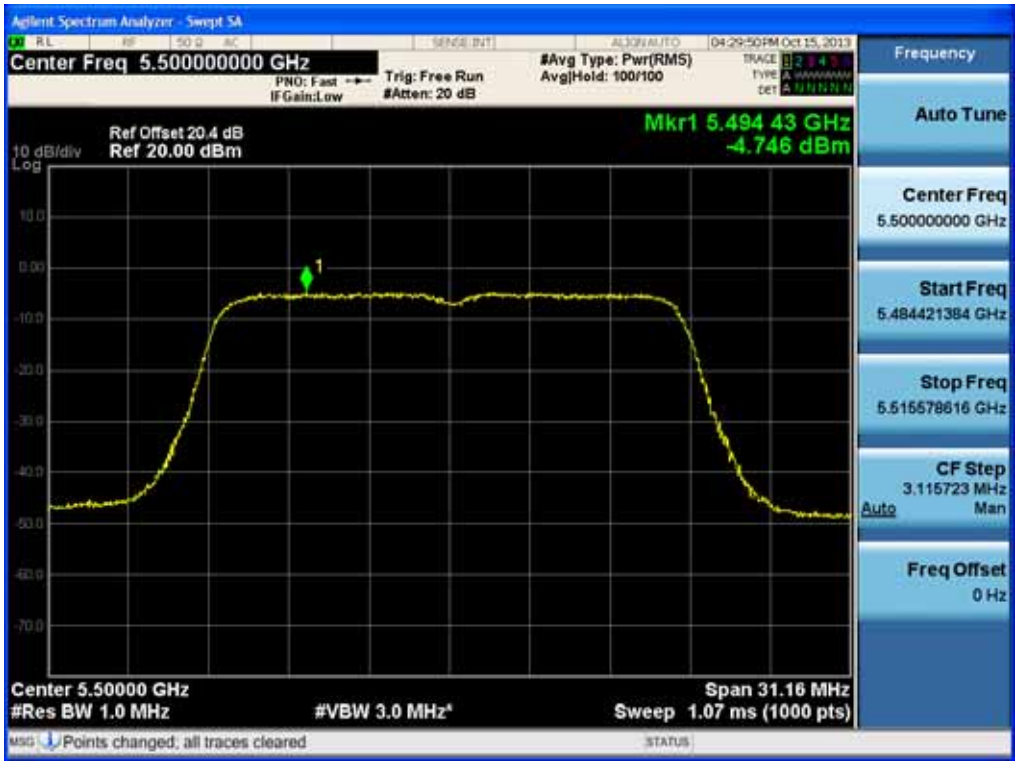
20 MHz BW

Power Spectral Density (802.11ac-CH 36)

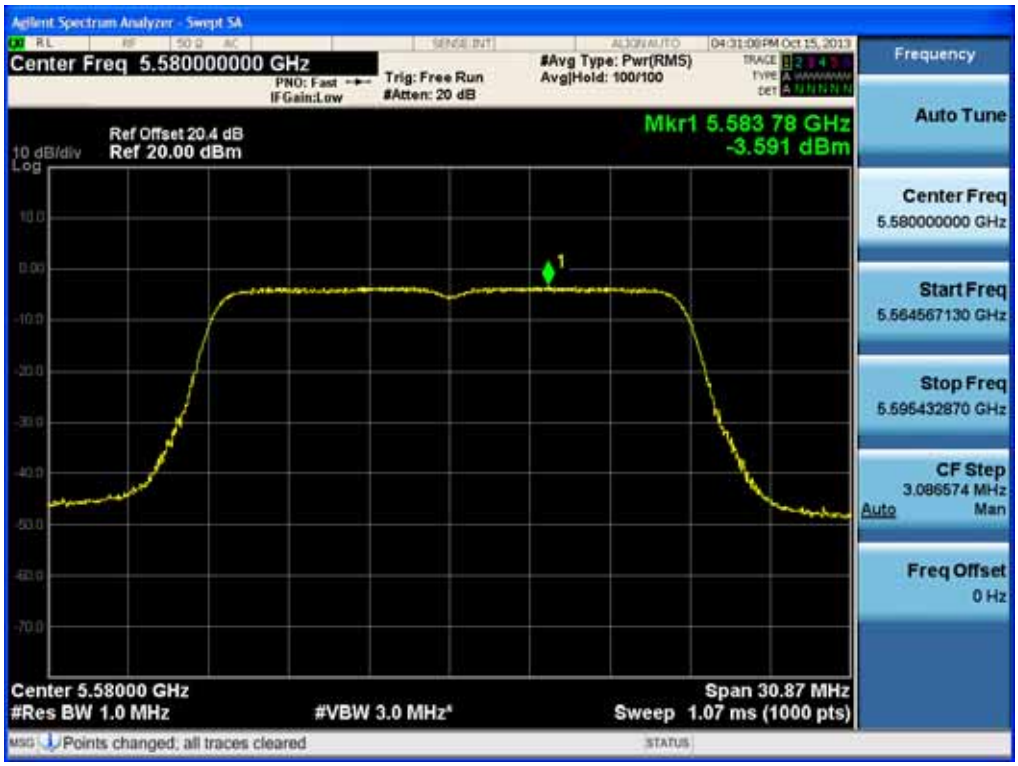
Power Spectral Density (802.11ac-CH 52)



Power Spectral Density (802.11ac-CH 100)

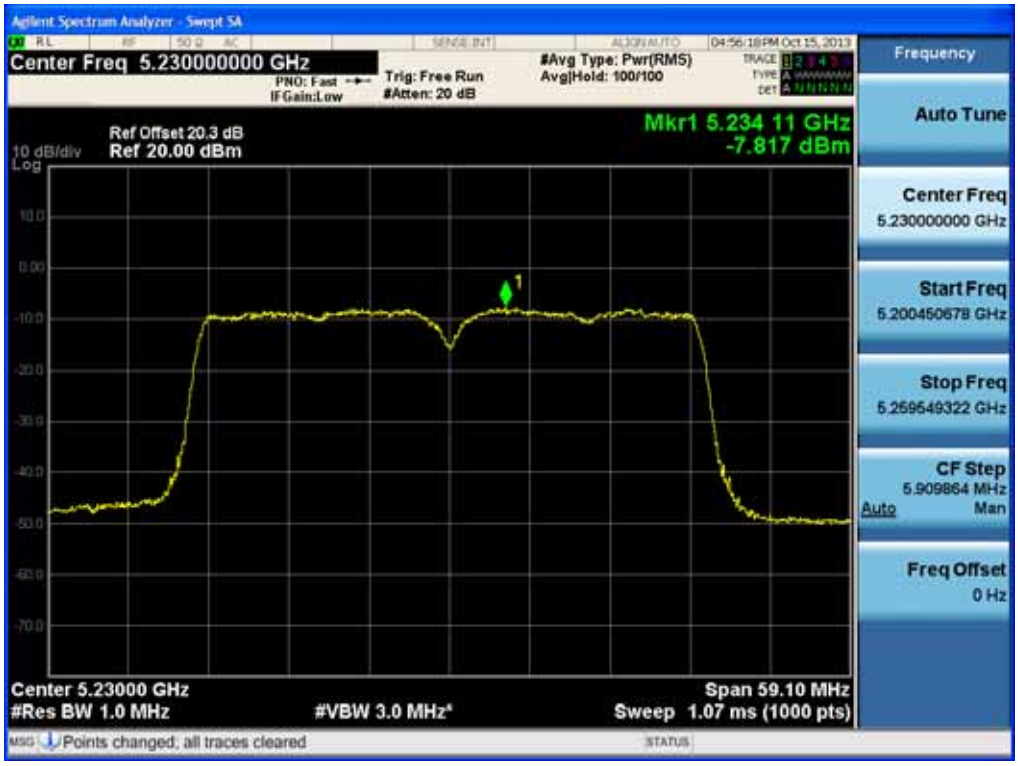


Power Spectral Density (802.11ac-CH 116)

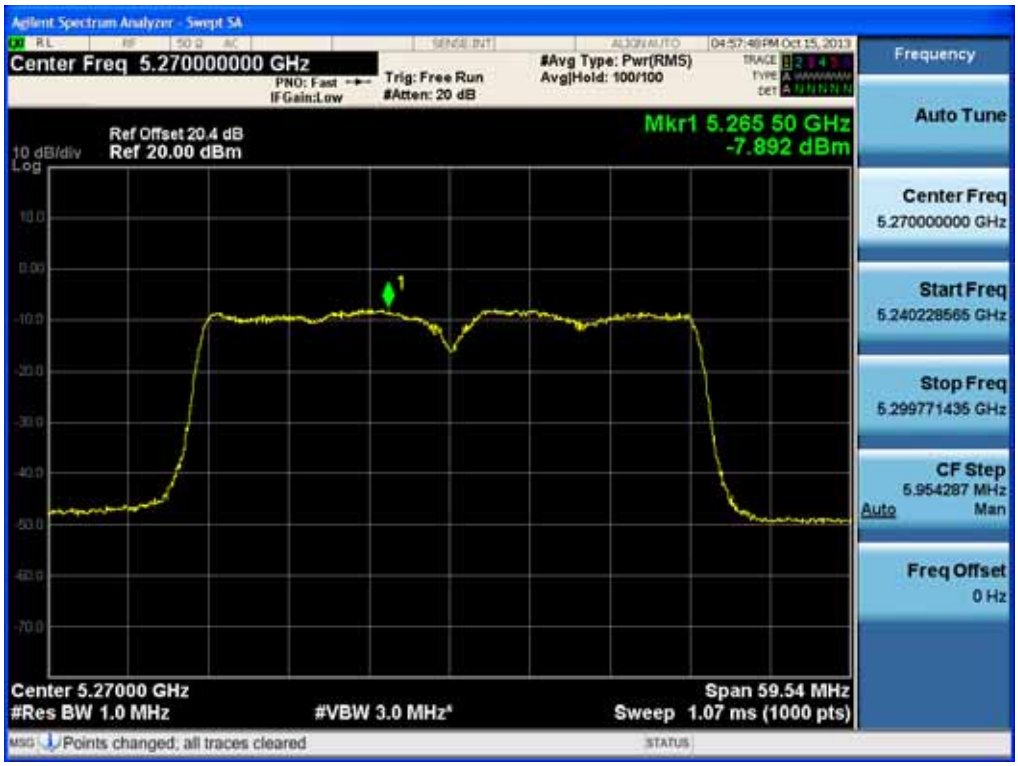


40 MHz BW

Power Spectral Density (802.11ac-CH 46)



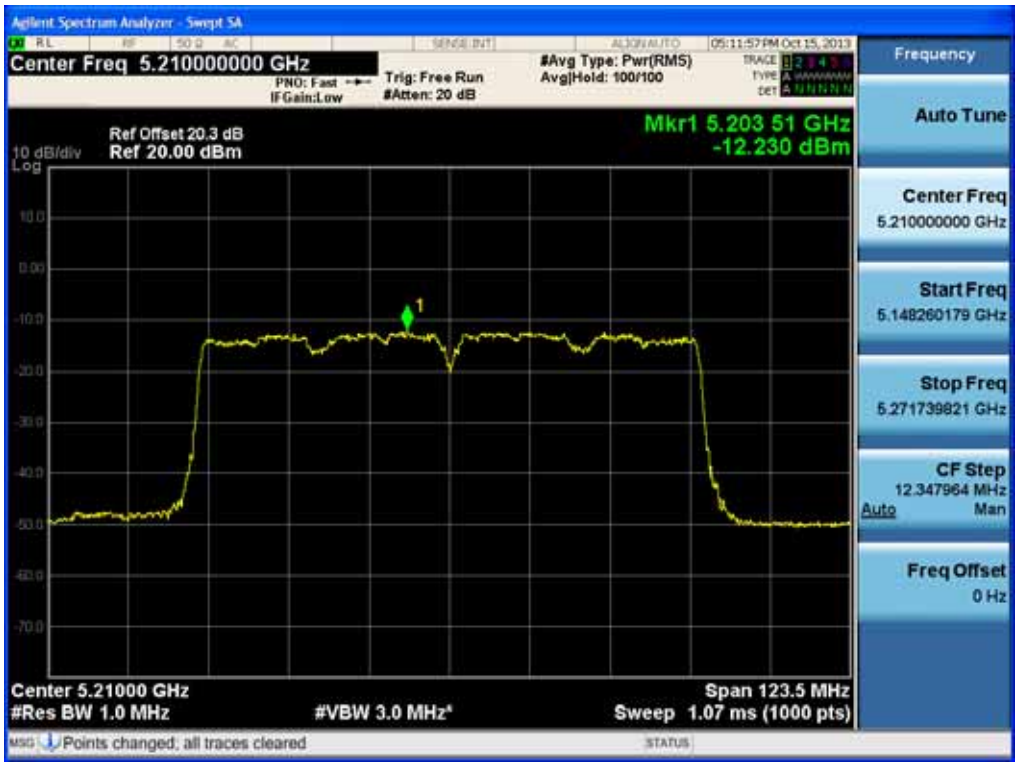
Power Spectral Density (802.11ac-CH 54)



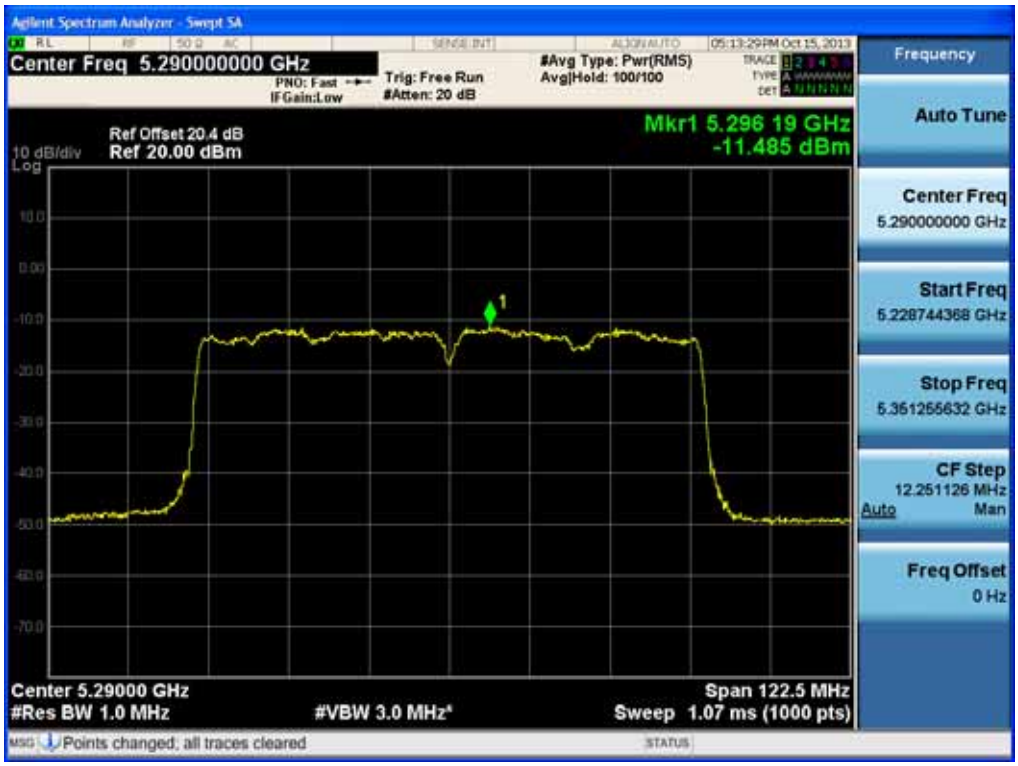
Power Spectral Density (802.11ac-CH 110)

80 MHz BW

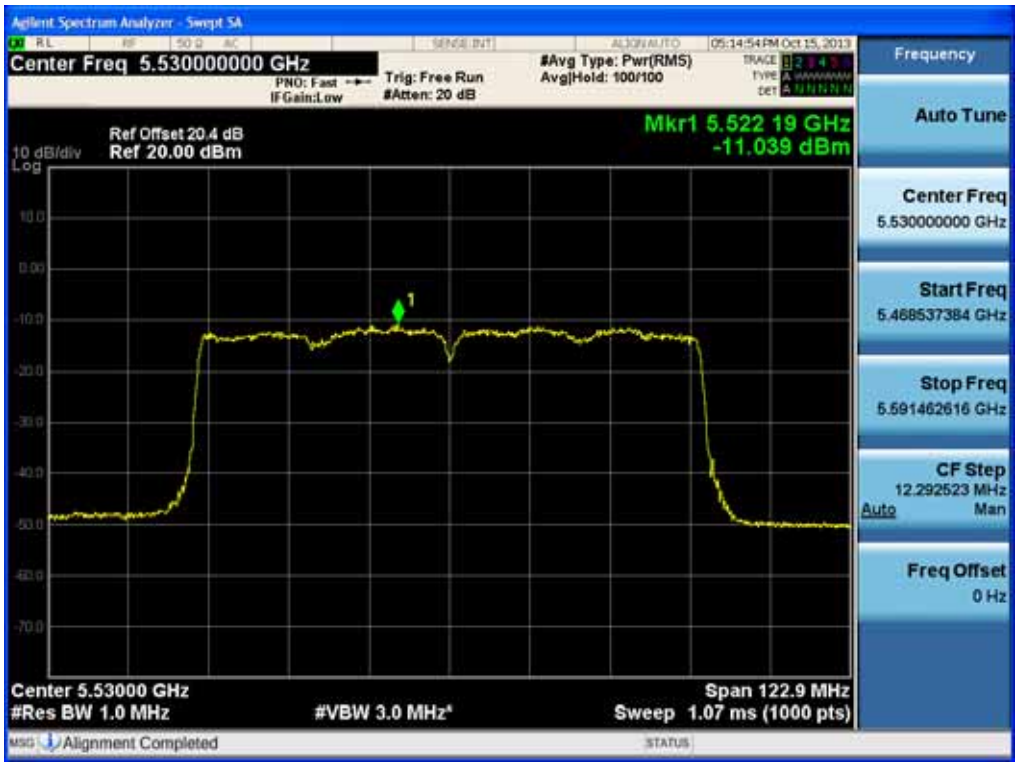
Power Spectral Density (802.11ac-CH 42)



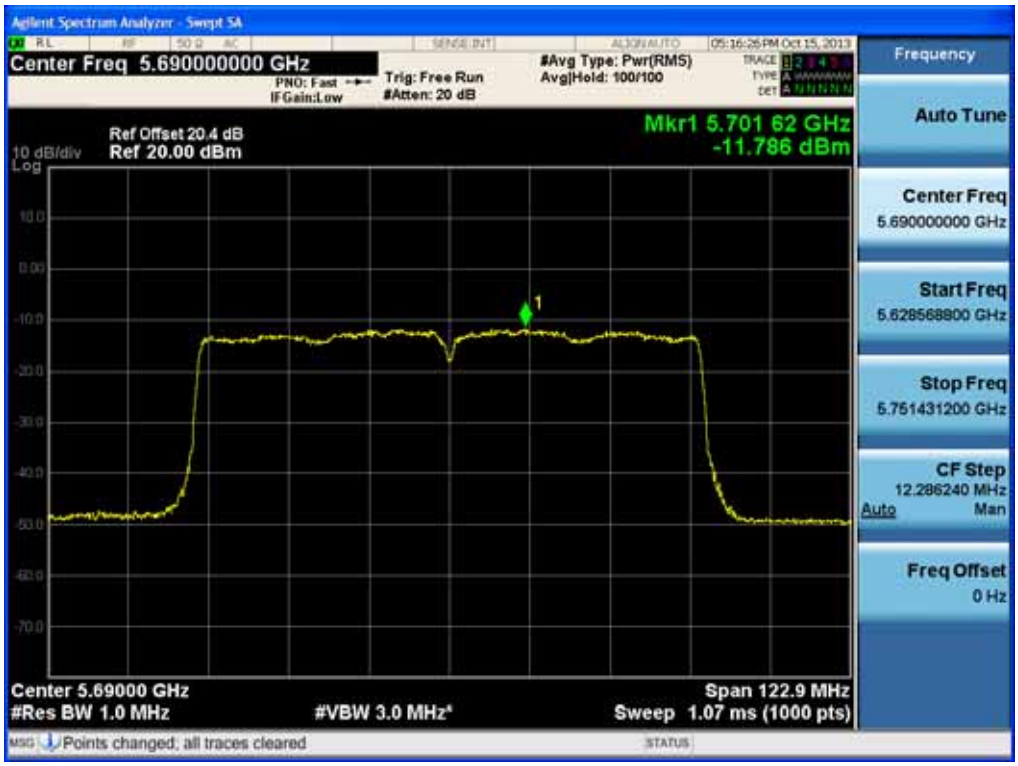
Power Spectral Density (802.11ac-CH 58)



Power Spectral Density (802.11ac-CH 106)



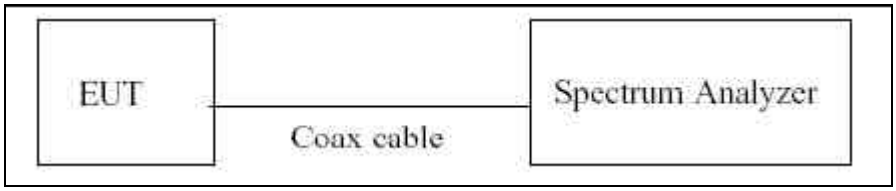
Power Spectral Density (802.11ac-CH 138)



8.5 PEAK EXCURSION RATIO

The spectrum analyzer was connected to the antenna terminal while the EUT was operating in the continuous transmission mode at the appropriate center frequencies. The largest permissible difference between the modulation envelope(measured using a peak hold function) and the maximum conducted output power 13 dB/MHz.

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

We tested according to KDB 789033(issued 04/08/2013).

The spectrum analyzer is set to :

1. Span = Set the span to view the entire emission bandwidth.
2. RBW = 1 MHz
3. VBW ≥ 3 MHz
4. Detector Mode = Peak
5. Trace Mode = Max hold
6. Allow the sweeps to continue until the trace stabilizes.
7. Use the peak search function to find the peak of the spectrum.
8. Use the procedure to measure the PPSD
9. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

Note :

1. The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.
2. Spectrum offset = Attenuator loss + Cable loss
3. We apply to the offset in the 5.2 GHz, 5.3 GHz and 5.6 GHz range that was rounded off to the closest tenth dB. Actual value of loss for the attenuator and cable combination is below table.
4. We applied the 15.407 for Ch.144, 142 and 138 in 802.11ac according to KDB 644545 D01 v01r01.

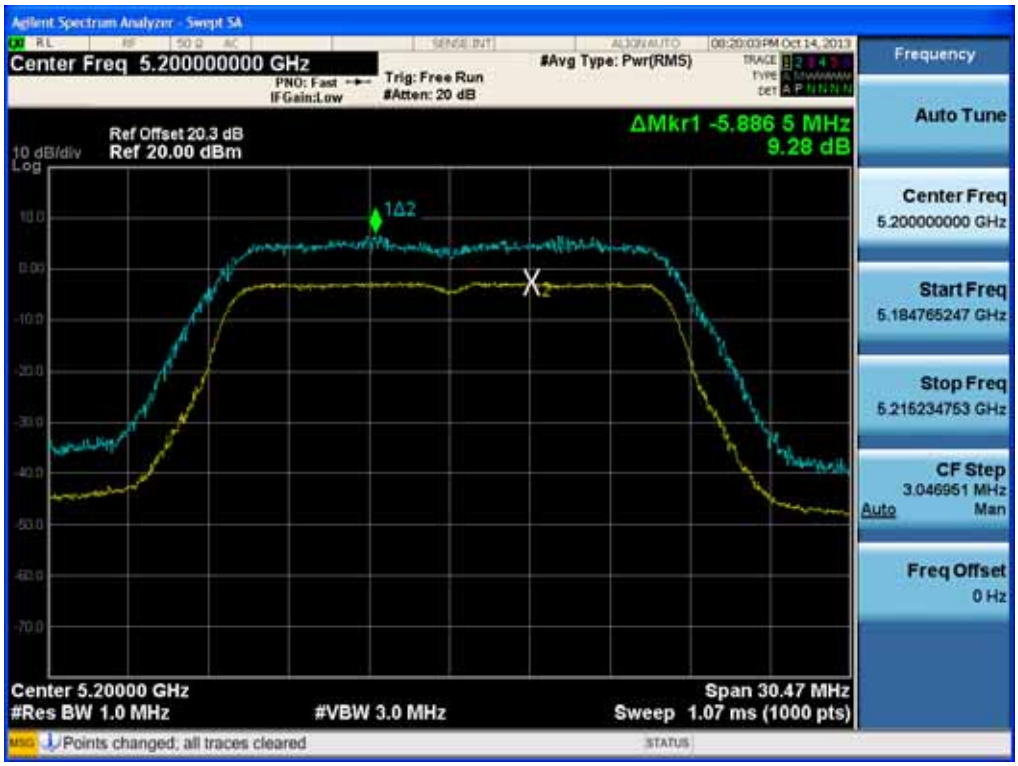
Band	Frequency(MHz)	Loss(dB)
UNII 1	5180	20.30
	5190	20.29
	5200	20.28
	5230	20.29
	5240	20.34
UNII 2	5260	20.37
	5270	20.38
	5300	20.40
	5310	20.39
	5320	20.39
UNII 2e	5500	20.35
	5510	20.36
	5550	20.41
	5580	20.43
	5670	20.43
	5700	20.30

(Actual value of loss for the attenuator and cable combination)

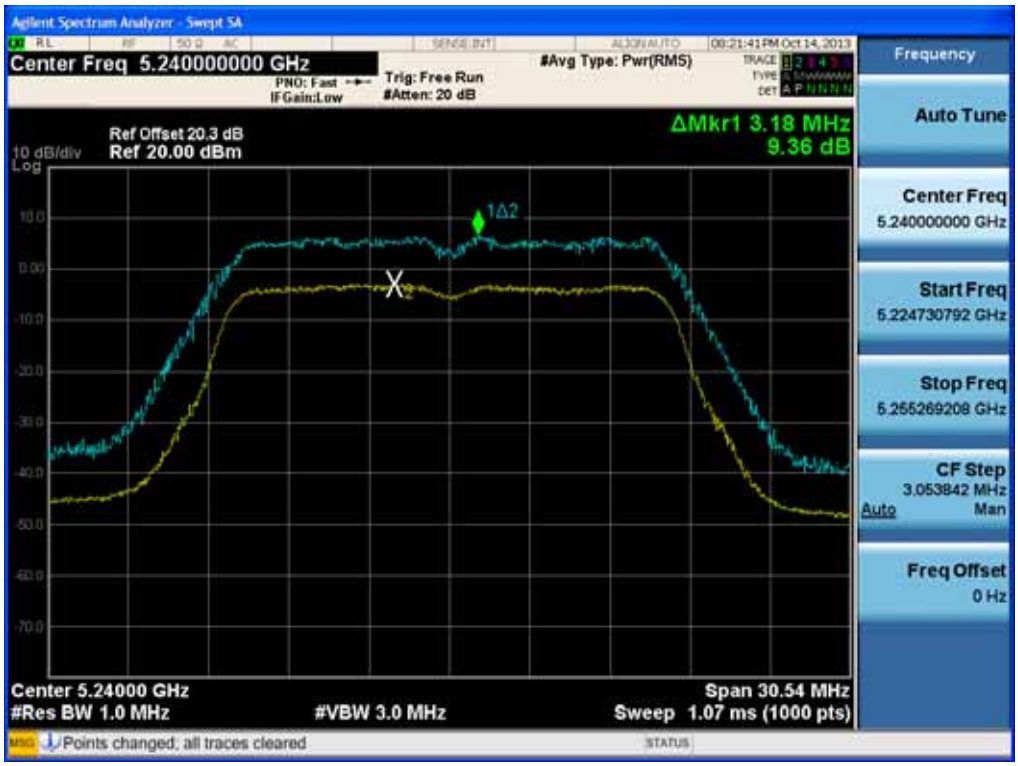
▣ RESULT PLOTS

Peak Excursion Ratio (802.11a-CH 36)

Peak Excursion Ratio (802.11a-CH 40)



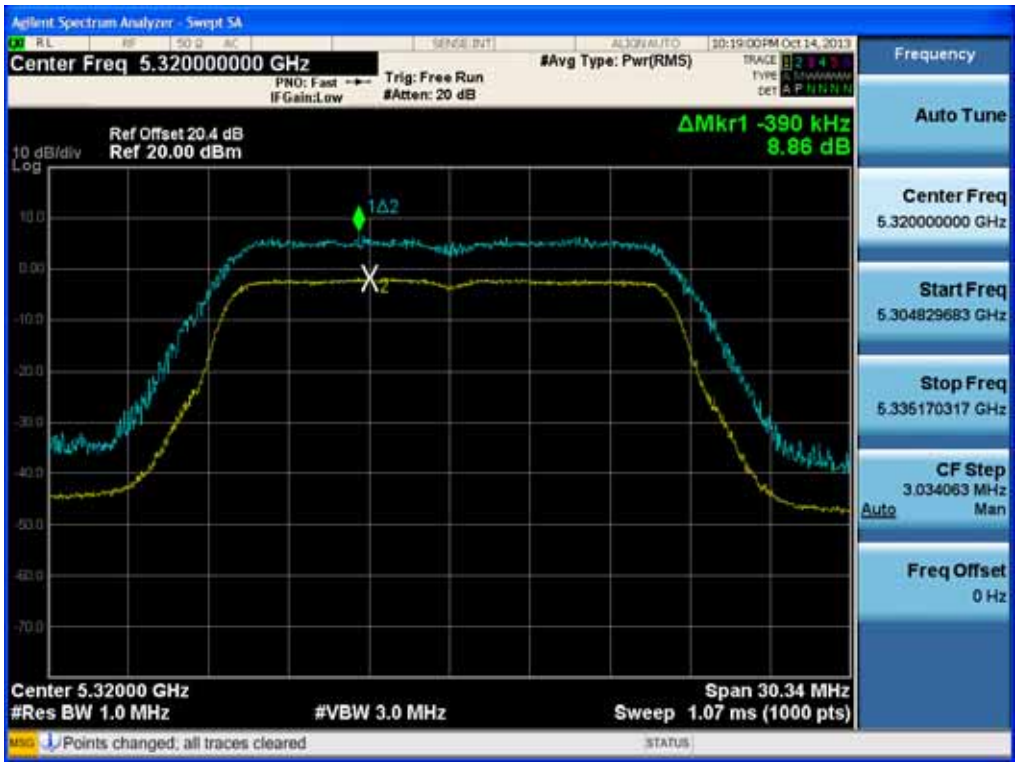
Peak Excursion Ratio (802.11a-CH 48)



Peak Excursion Ratio (802.11a-CH 52)

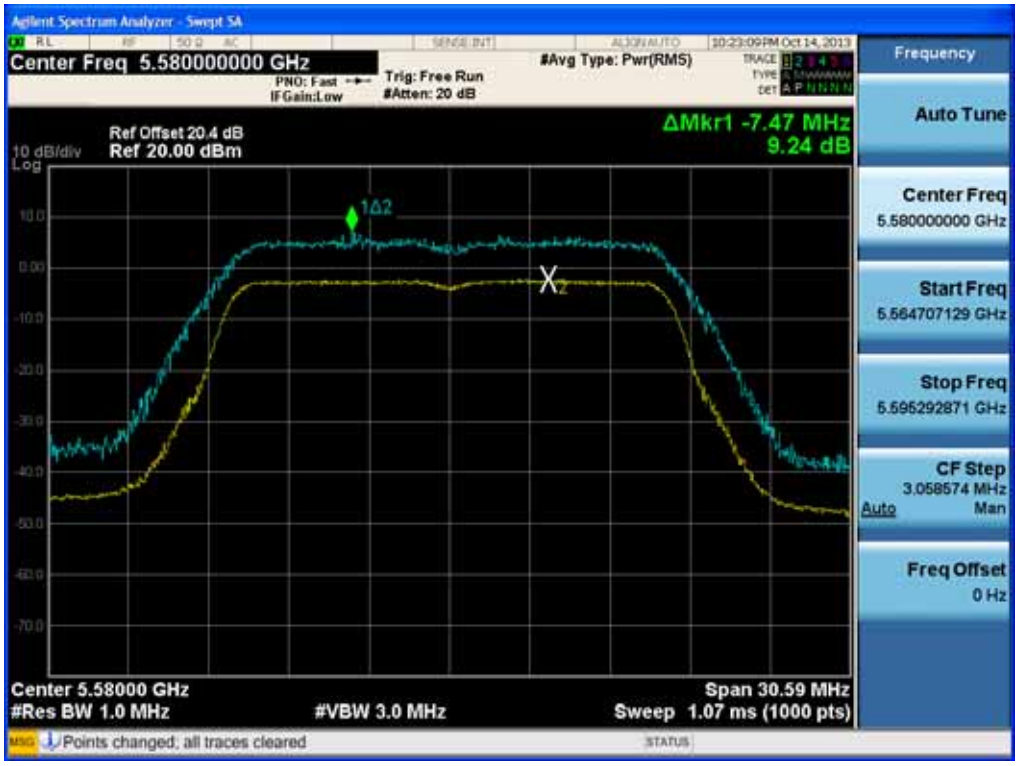
Peak Excursion Ratio (802.11a-CH 60)

Peak Excursion Ratio (802.11a-CH 64)

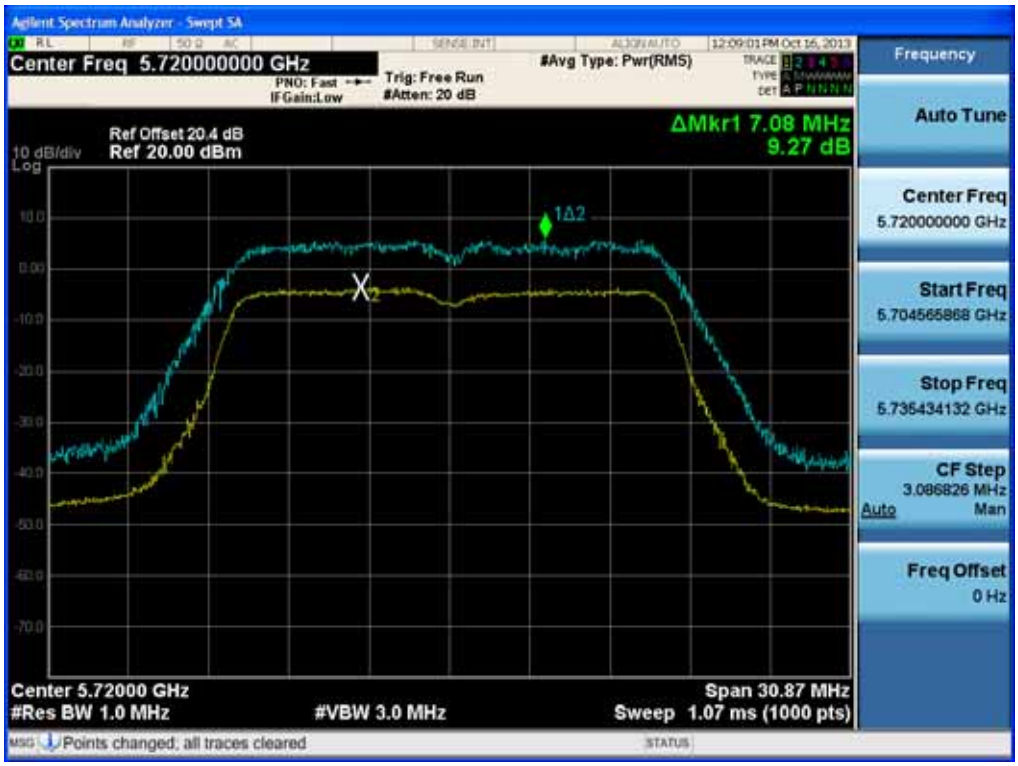


Peak Excursion Ratio (802.11a-CH 100)

Peak Excursion Ratio (802.11a-CH 116)

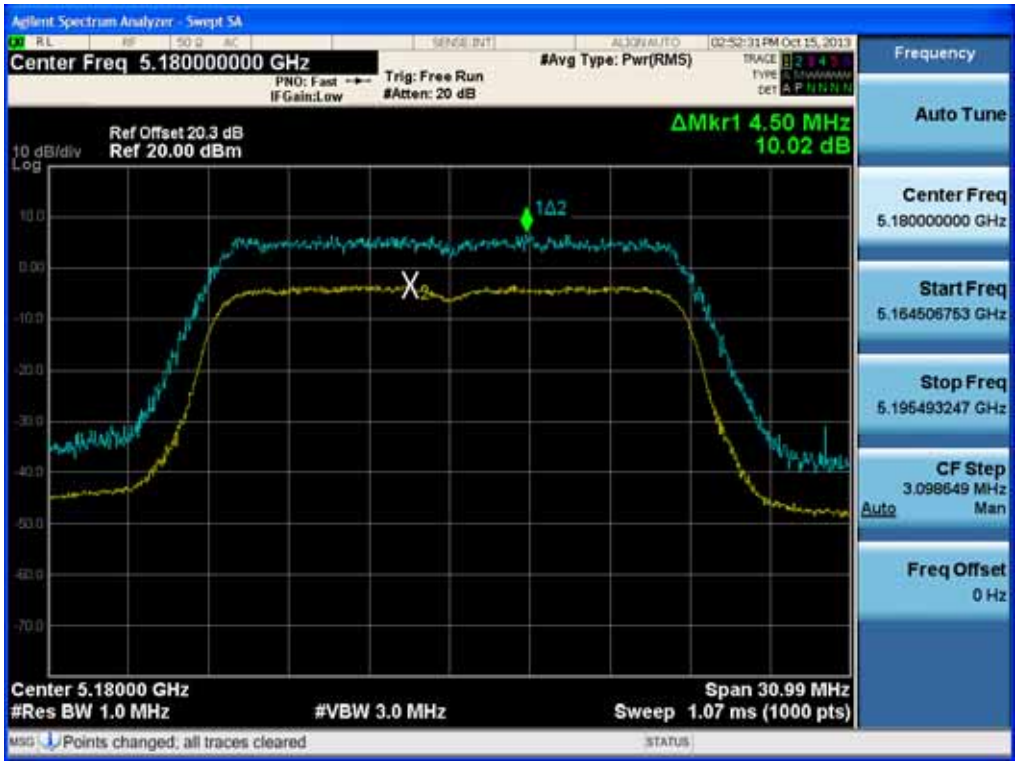


Peak Excursion Ratio (802.11a-CH 144)

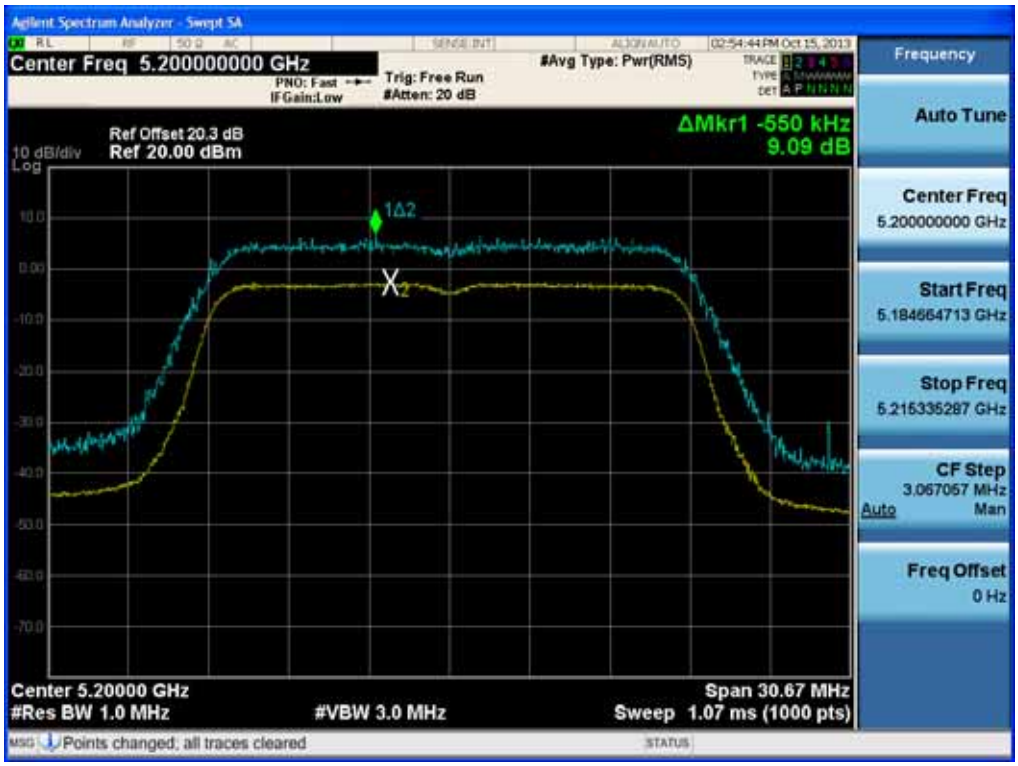


20 MHz BW

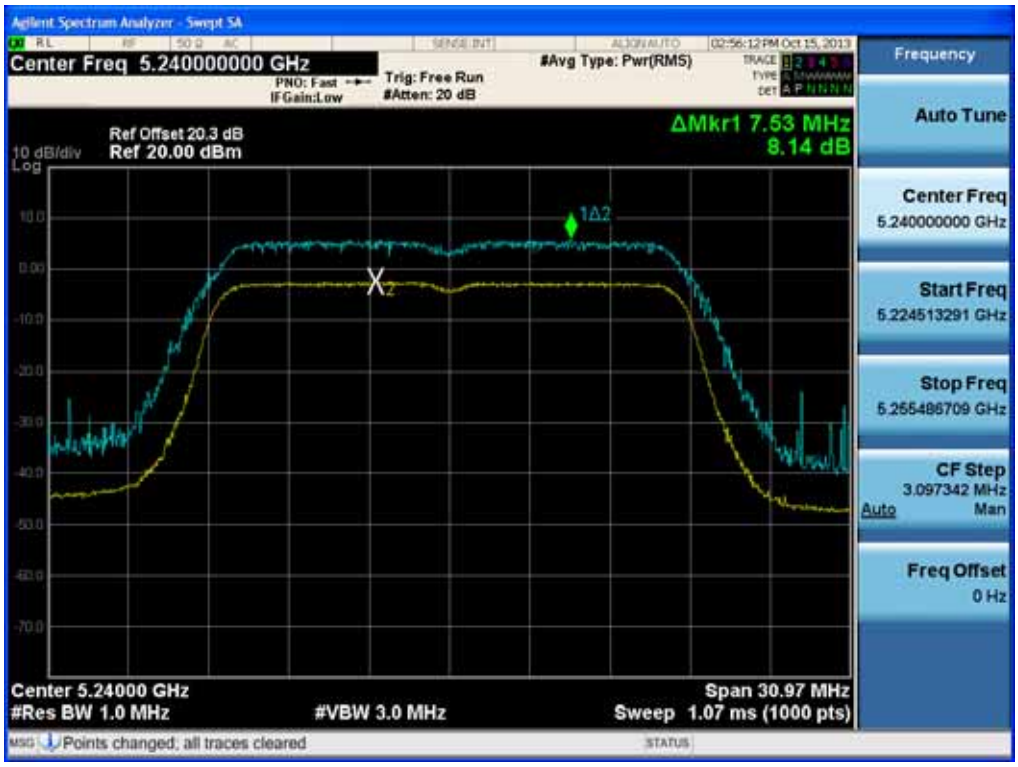
Peak Excursion Ratio (802.11n-CH 36)



Peak Excursion Ratio (802.11n-CH 40)

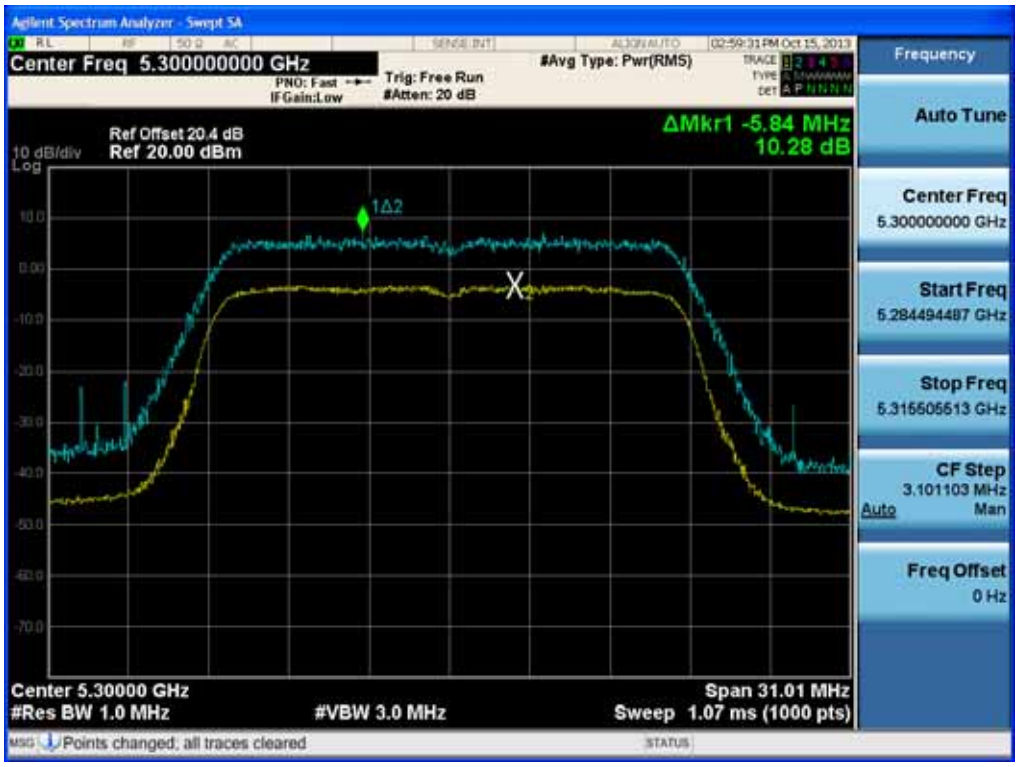


Peak Excursion Ratio (802.11n-CH 48)

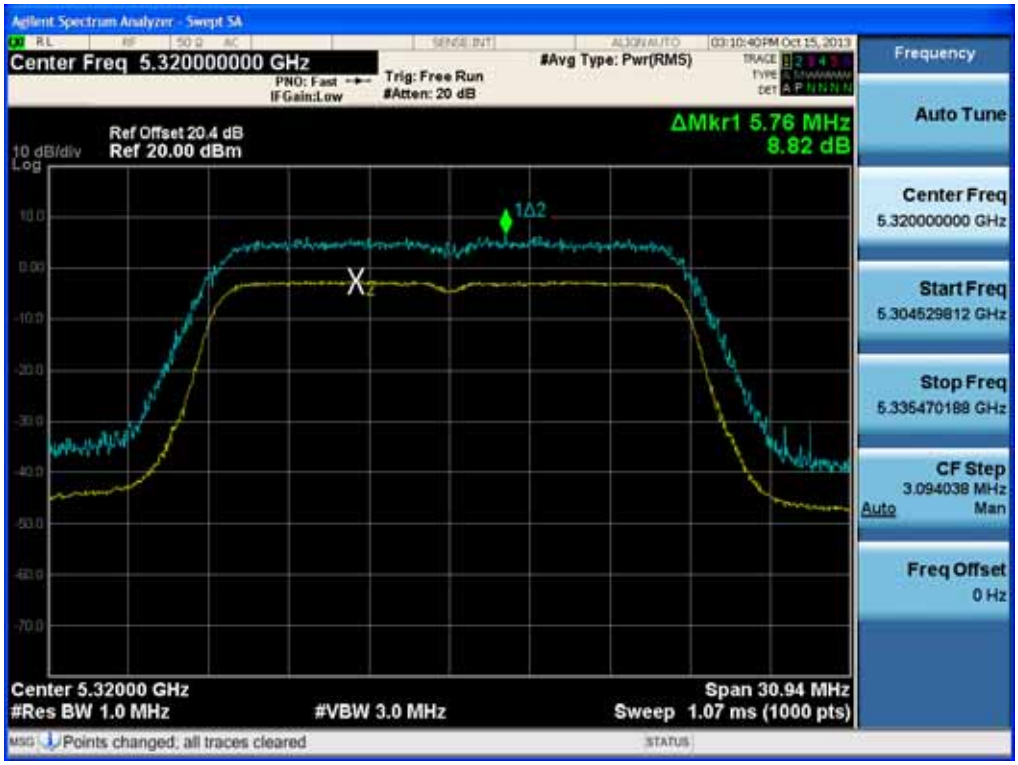


Peak Excursion Ratio (802.11n-CH 52)

Peak Excursion Ratio (802.11n-CH 60)

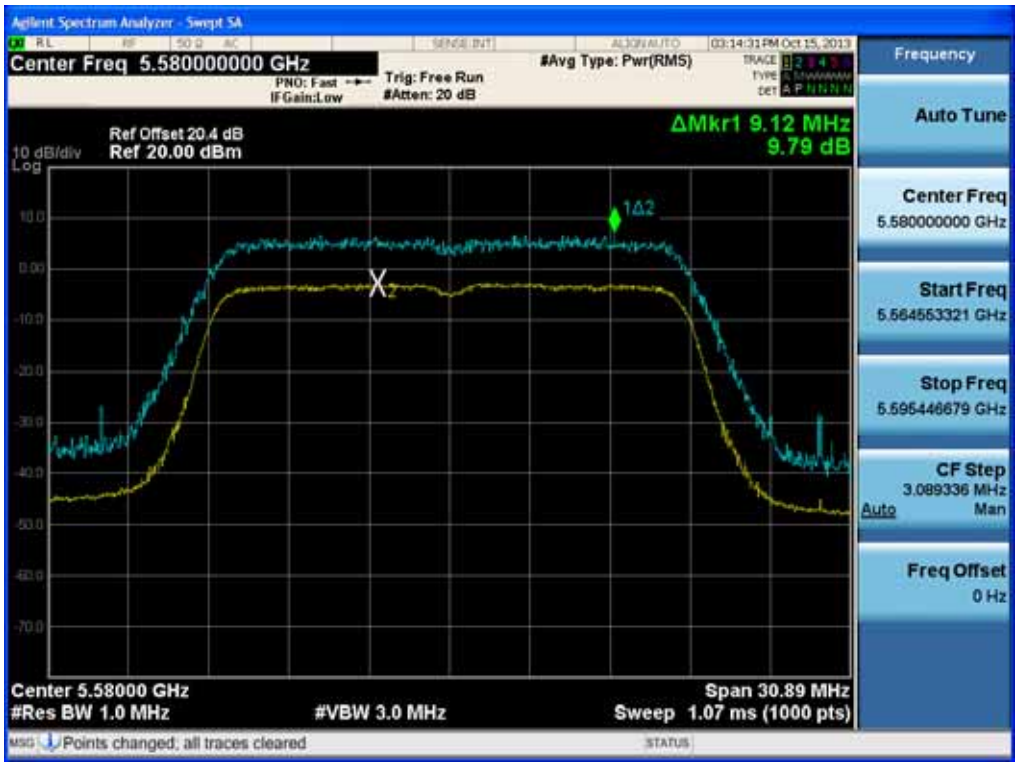


Peak Excursion Ratio (802.11n-CH 64)

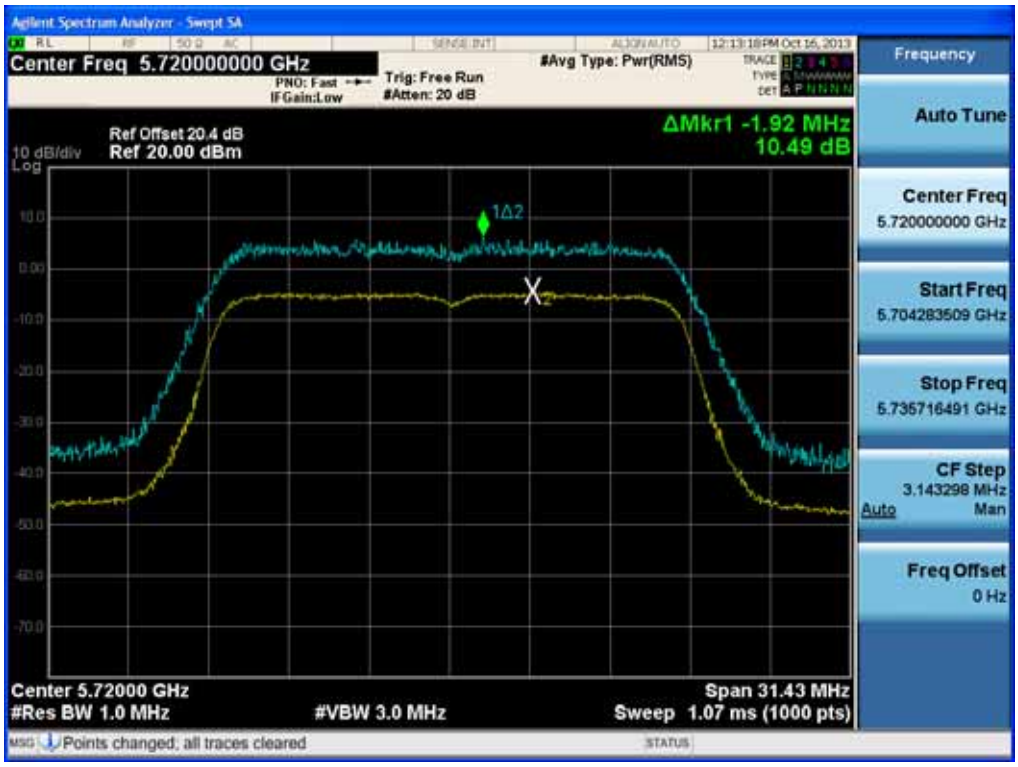


Peak Excursion Ratio (802.11n-CH 100)

Peak Excursion Ratio (802.11n-CH 116)

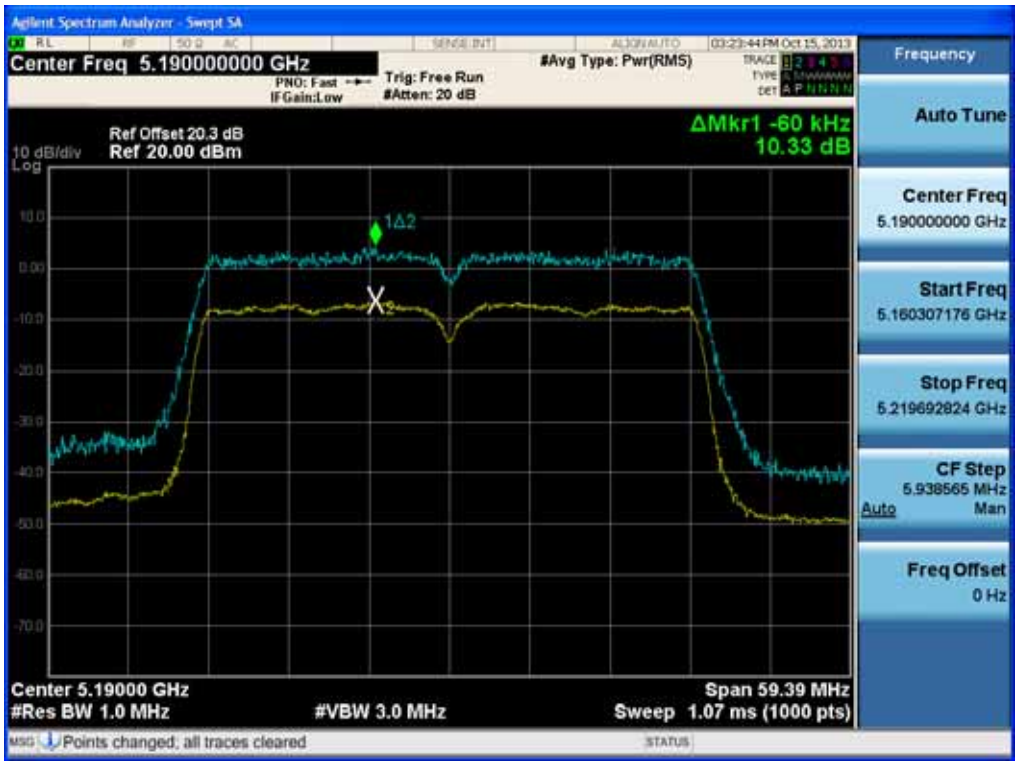


Peak Excursion Ratio (802.11n-CH 144)

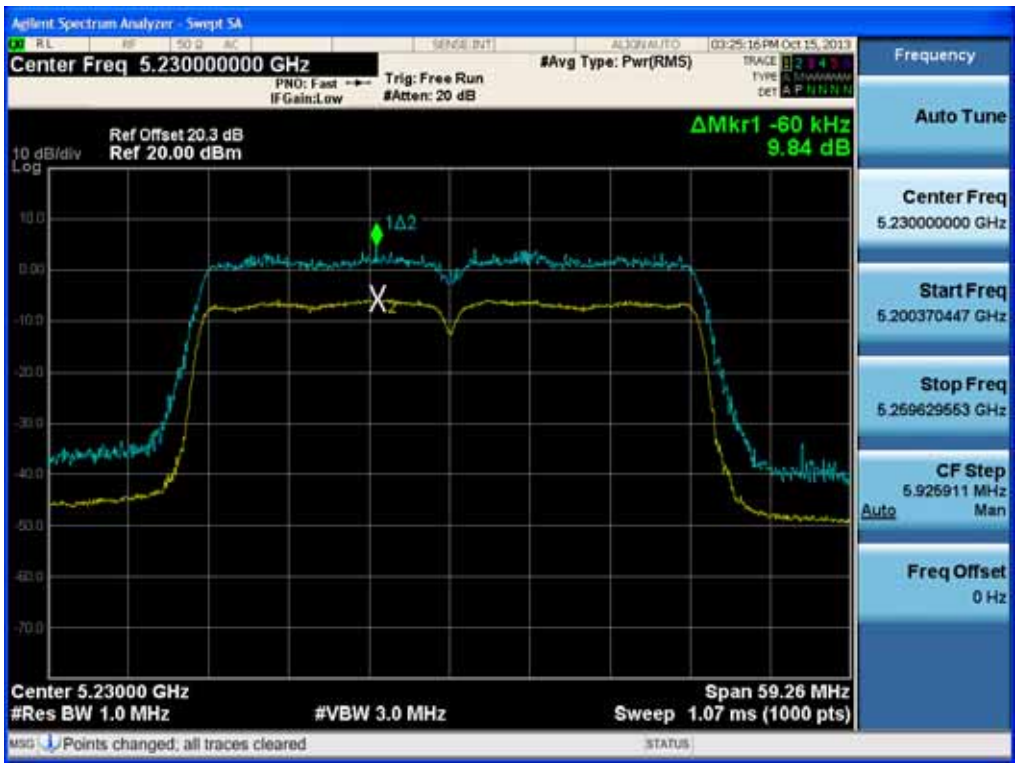


40 MHz BW

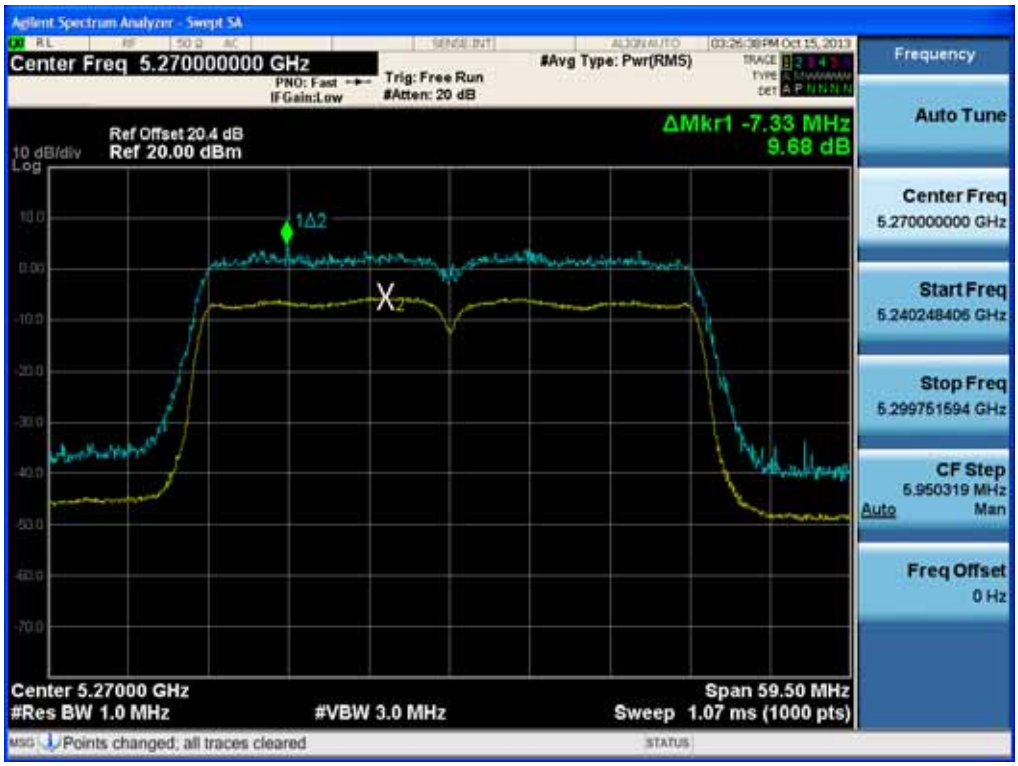
Peak Excursion Ratio (802.11n-CH 38)



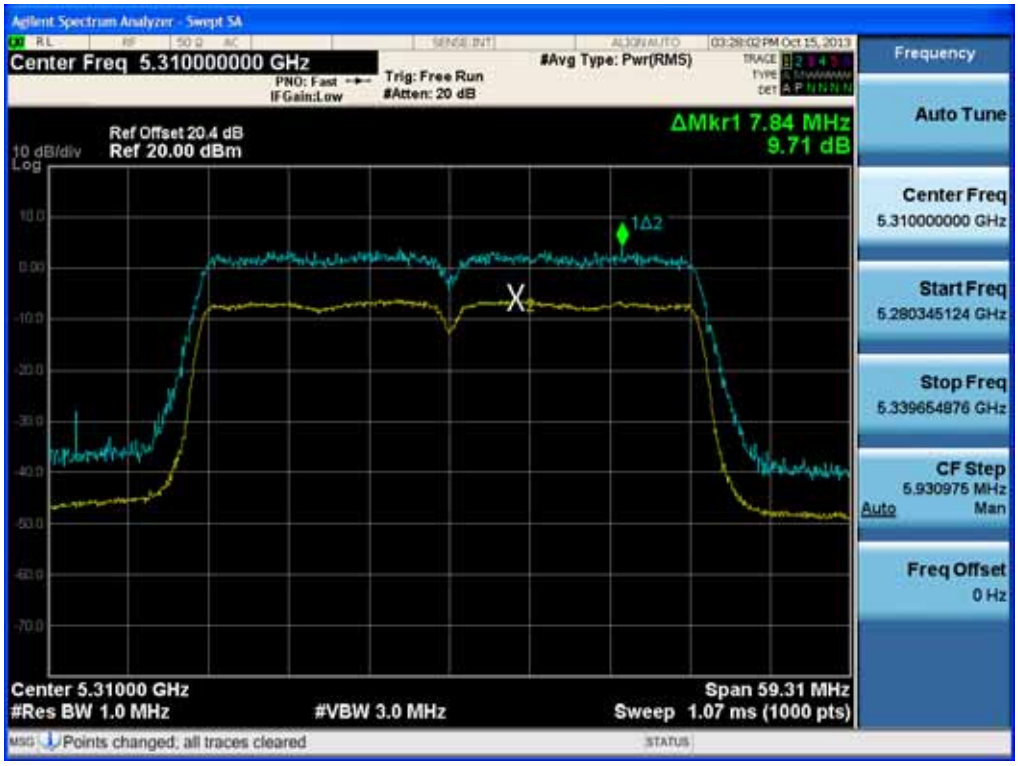
Peak Excursion Ratio (802.11n-CH 46)



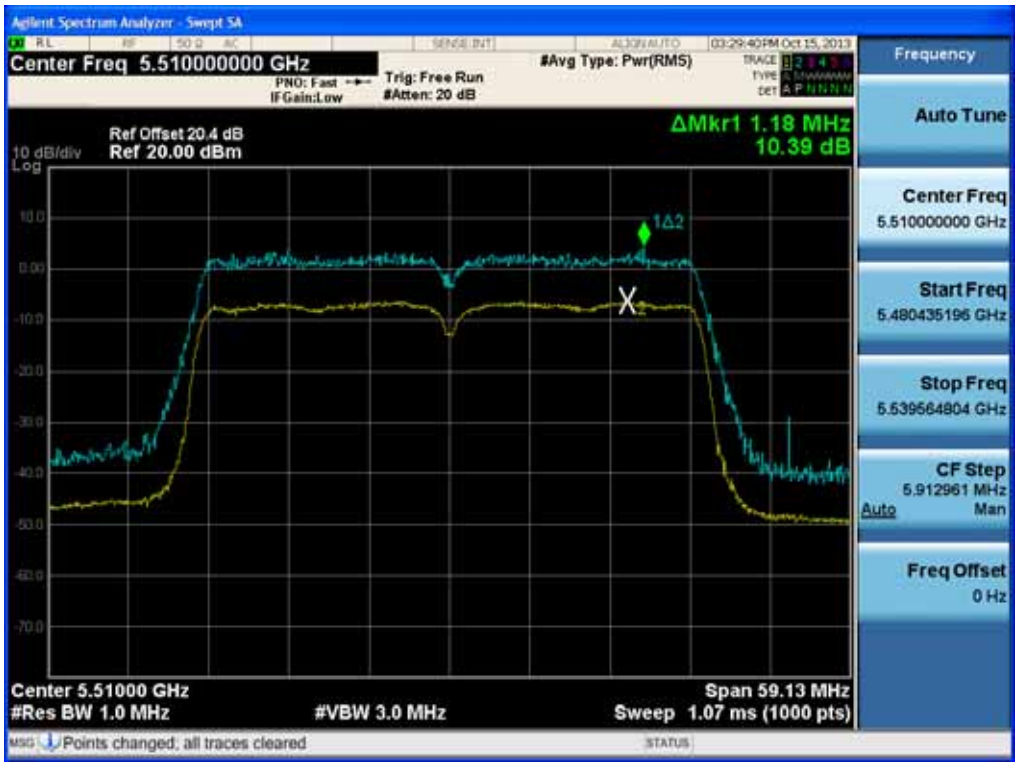
Peak Excursion Ratio (802.11n-CH 54)



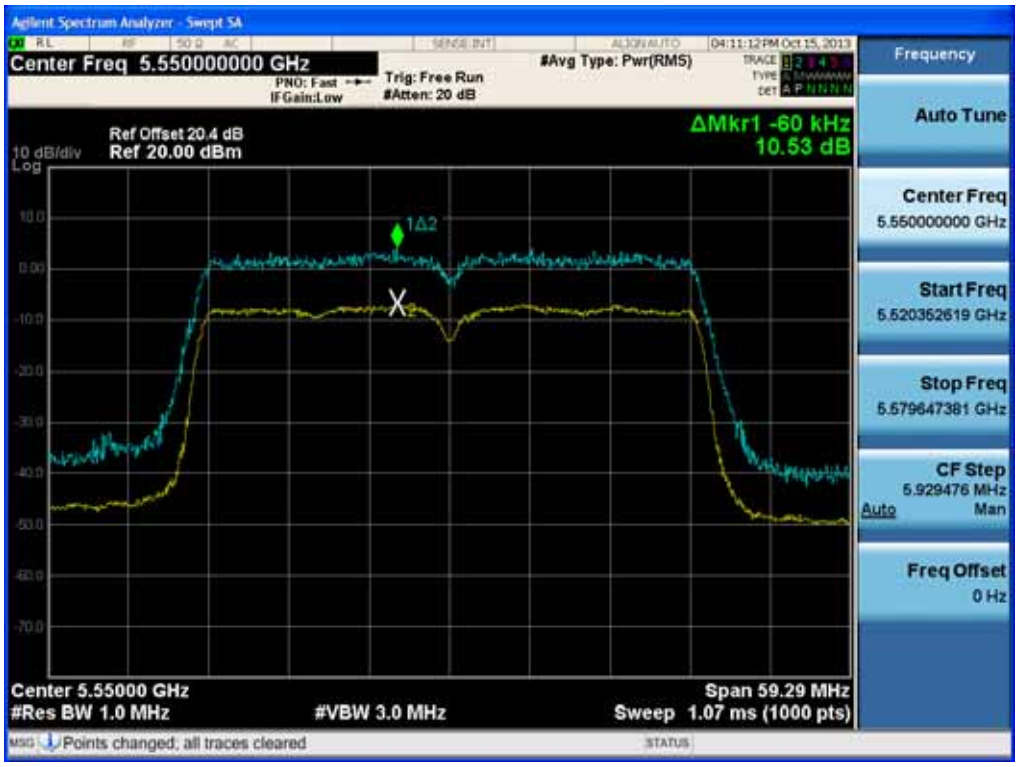
Peak Excursion Ratio (802.11n-CH 62)



Peak Excursion Ratio (802.11n-CH 102)



Peak Excursion Ratio (802.11n-CH 110)



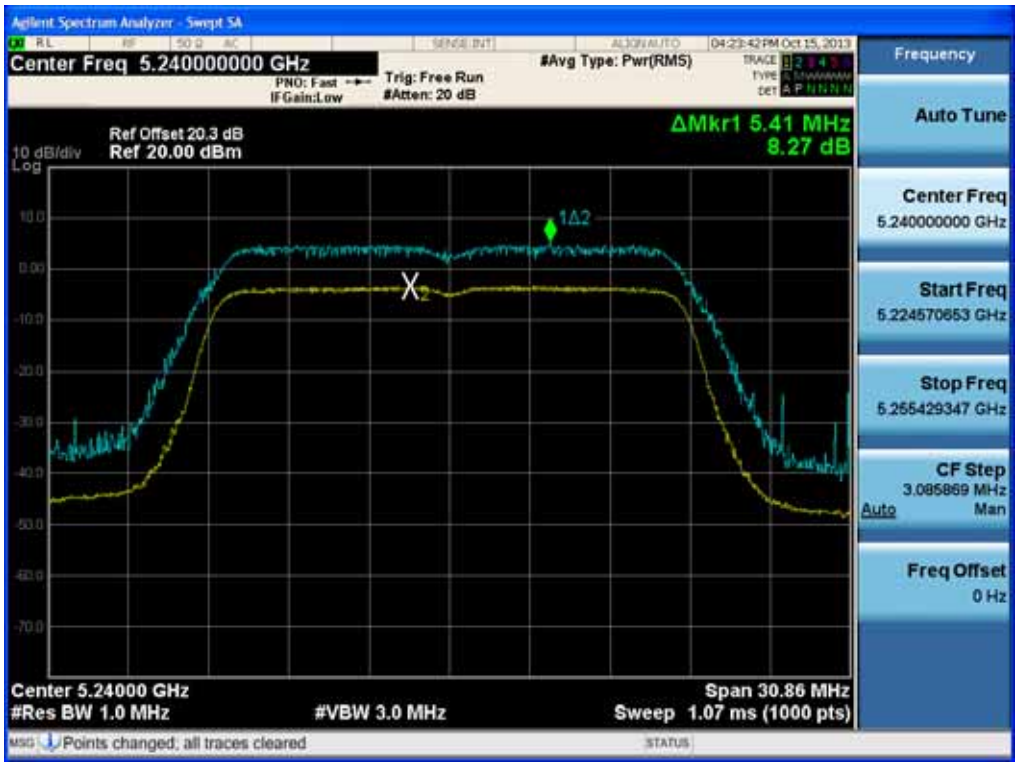
Peak Excursion Ratio (802.11n-CH 142)

20 MHz BW

Peak Excursion Ratio (802.11ac-CH 36)

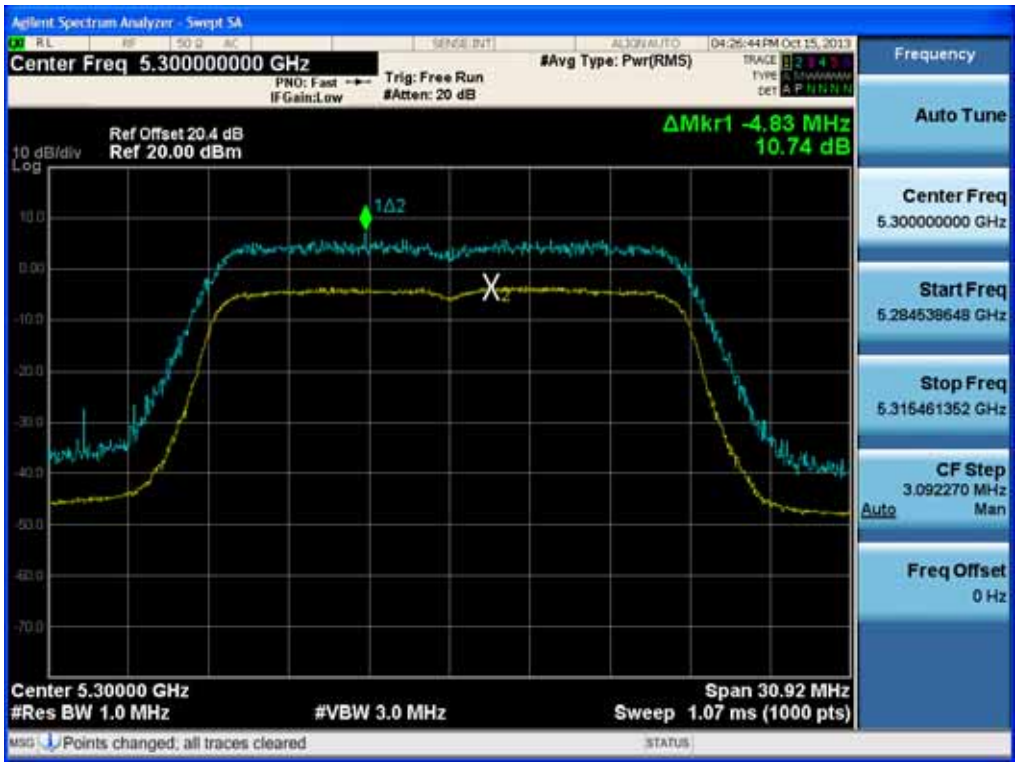
Peak Excursion Ratio (802.11ac-CH 40)

Peak Excursion Ratio (802.11ac-CH 48)

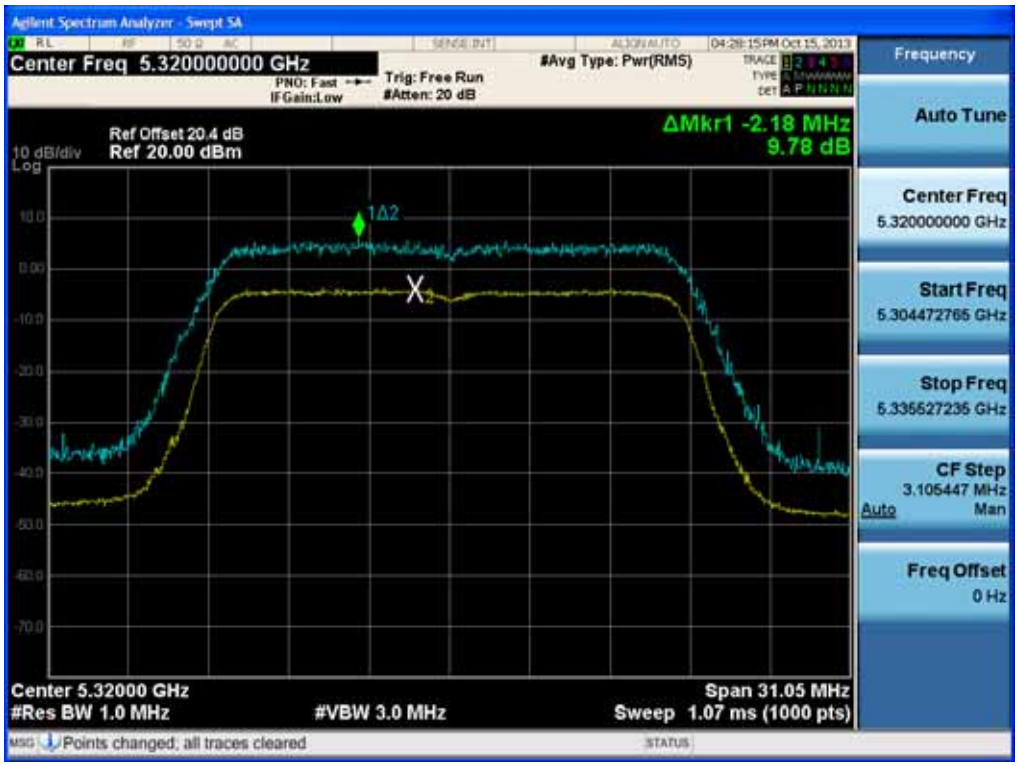


Peak Excursion Ratio (802.11ac-CH 52)

Peak Excursion Ratio (802.11ac-CH 60)

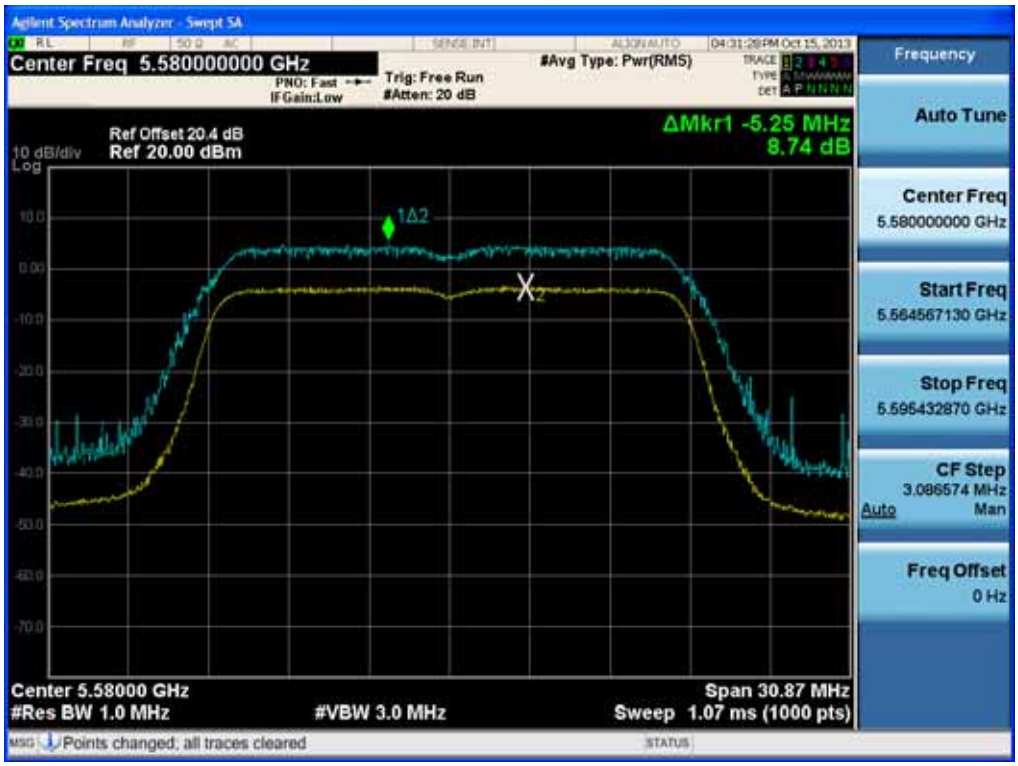


Peak Excursion Ratio (802.11ac-CH 64)

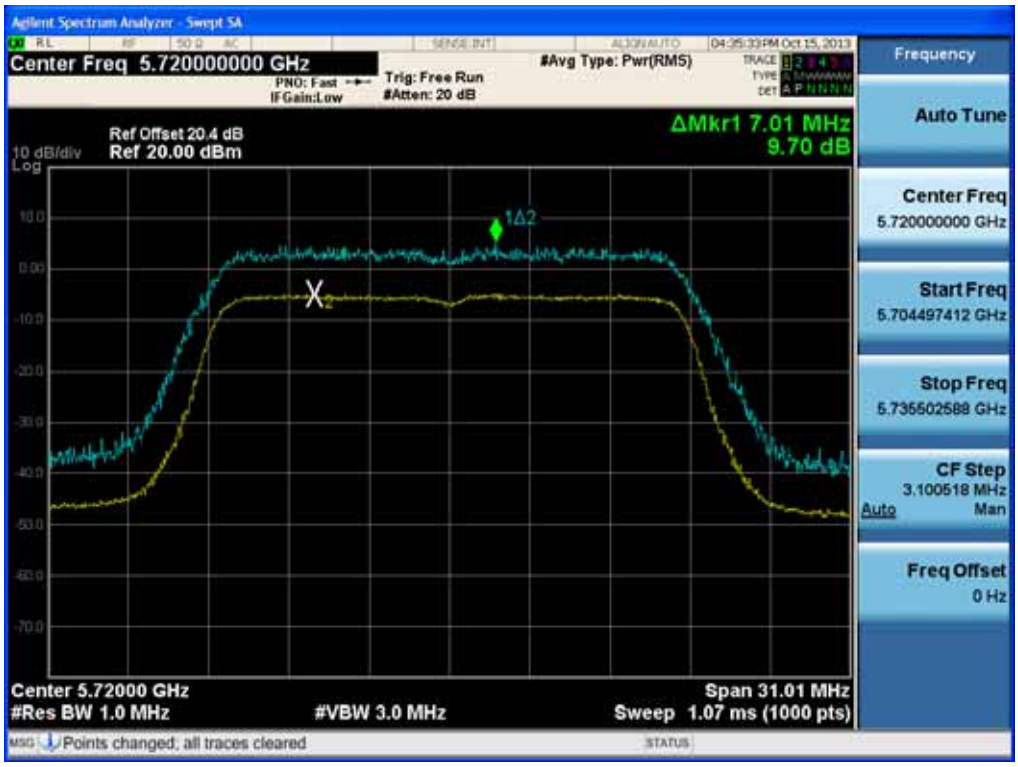


Peak Excursion Ratio (802.11ac-CH 100)

Peak Excursion Ratio (802.11ac-CH 116)



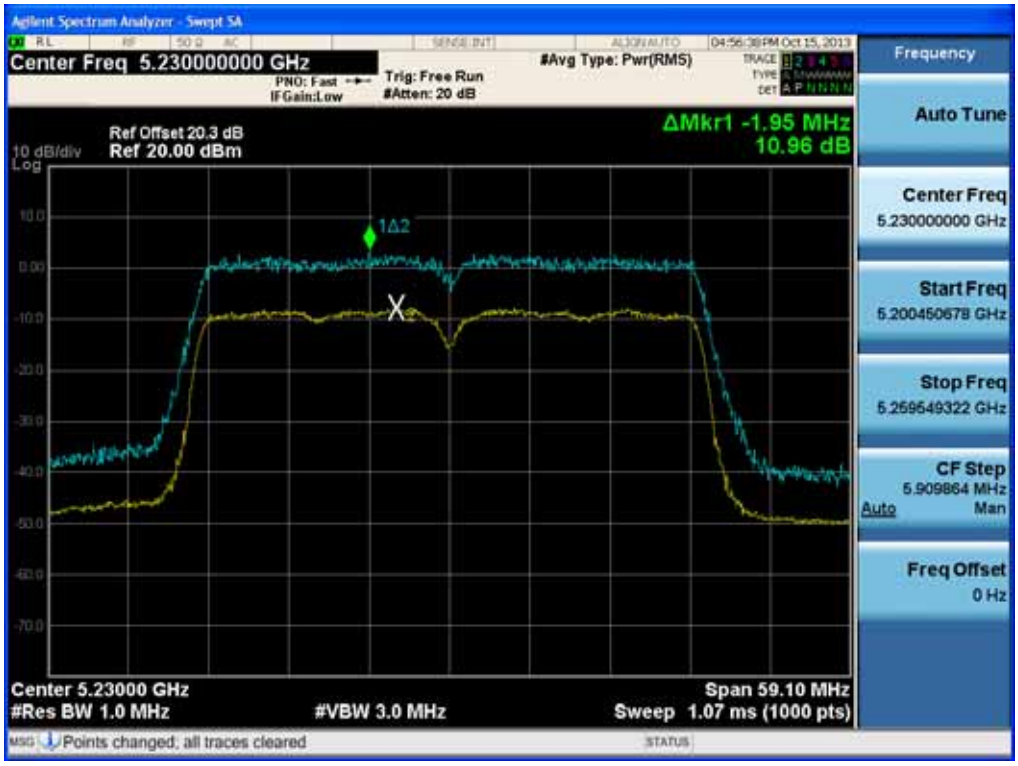
Peak Excursion Ratio (802.11ac-CH 144)



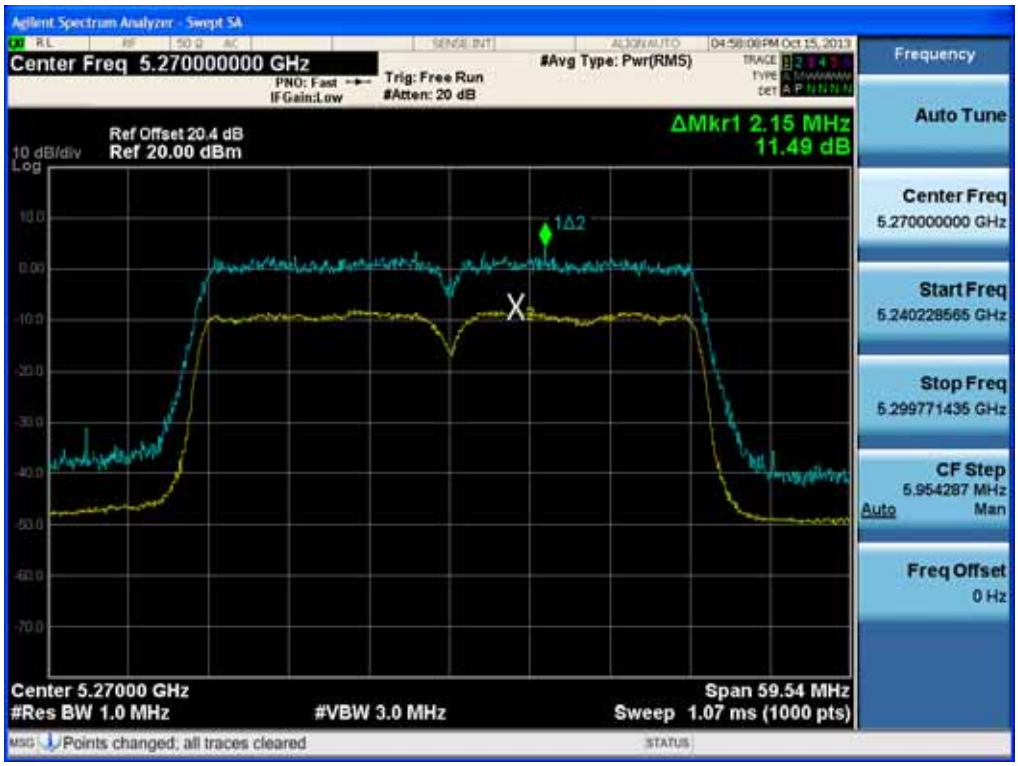
40 MHz BW

Peak Excursion Ratio (802.11ac-CH 38)

Peak Excursion Ratio (802.11ac-CH 46)

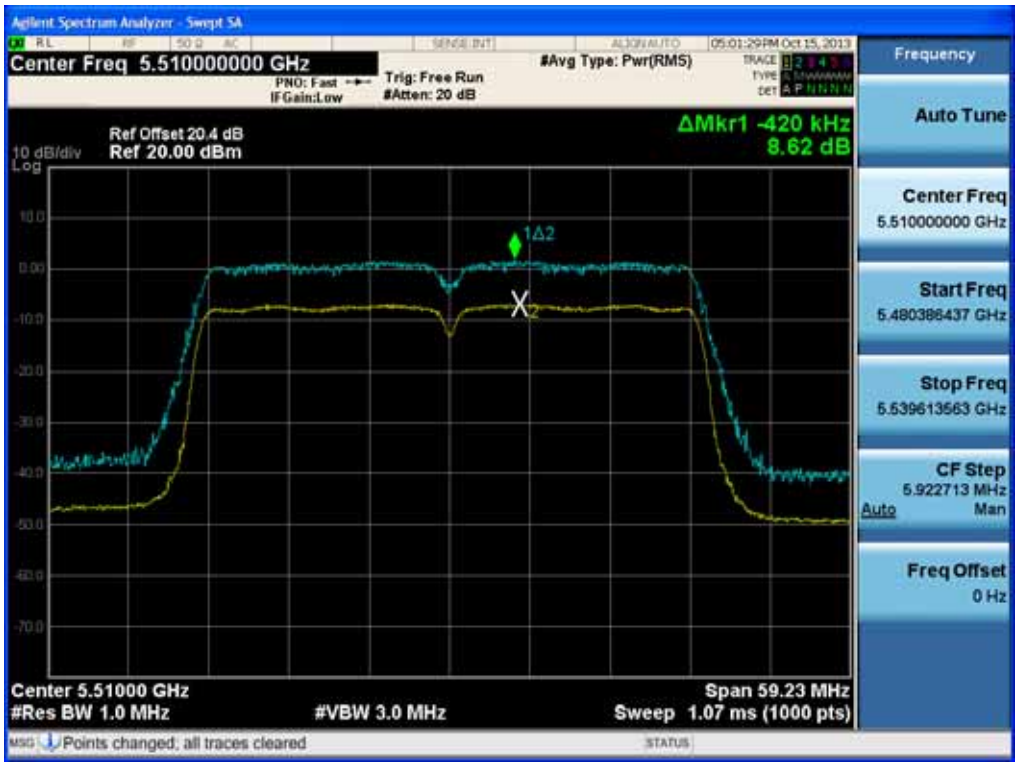


Peak Excursion Ratio (802.11ac-CH 54)

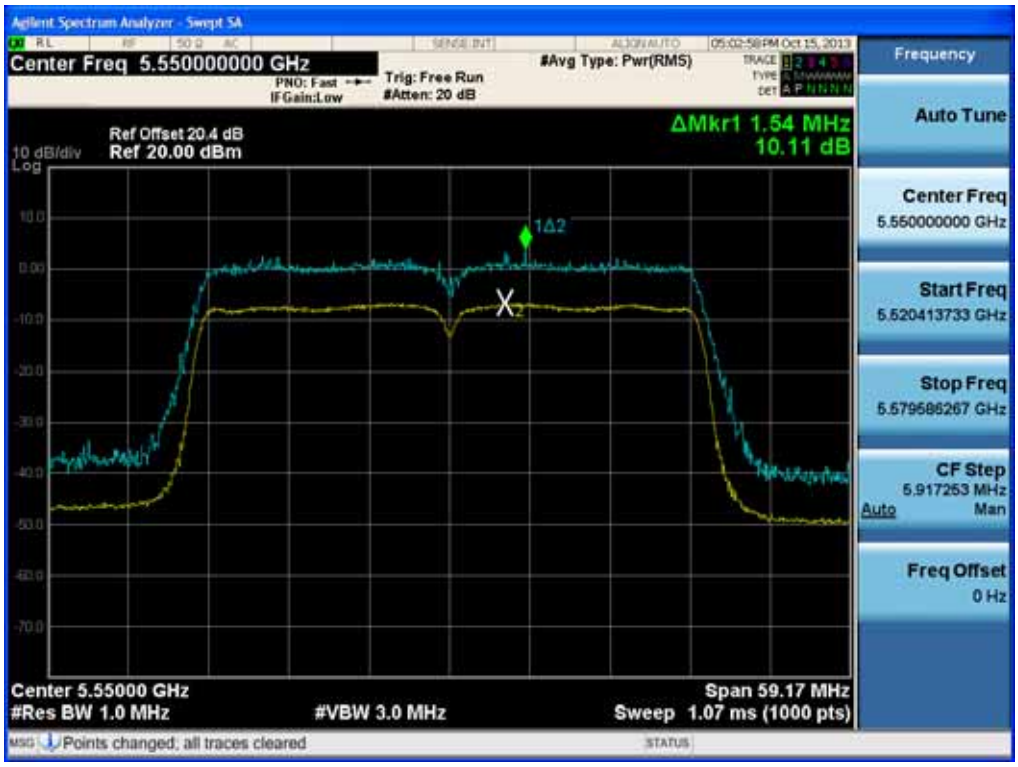


Peak Excursion Ratio (802.11ac-CH 62)

Peak Excursion Ratio (802.11ac-CH 102)



Peak Excursion Ratio (802.11ac-CH 110)

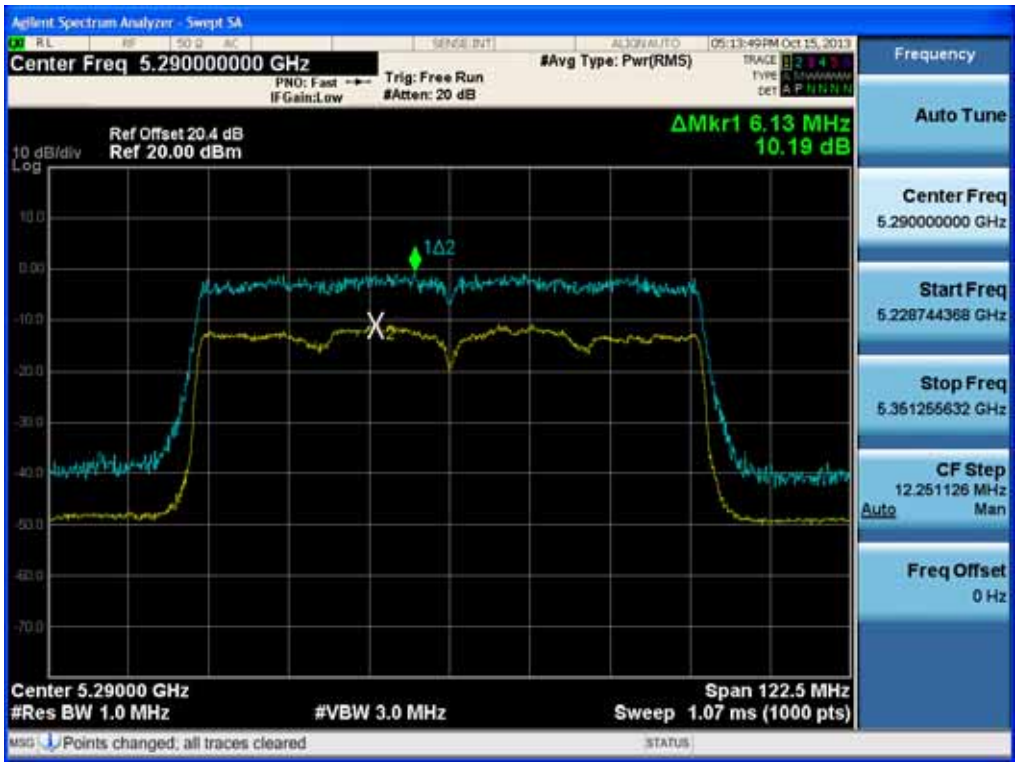


Peak Excursion Ratio (802.11ac-CH 142)

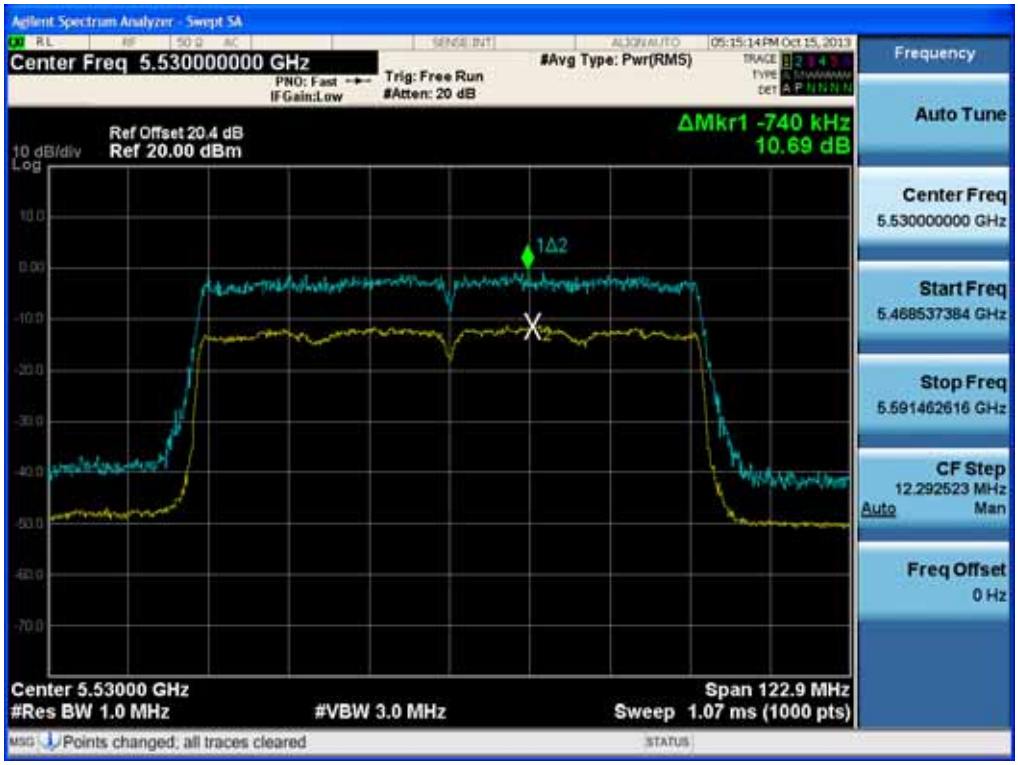
80 MHz BW

Peak Excursion Ratio (802.11ac-CH 42)

Peak Excursion Ratio (802.11ac-CH 58)



Peak Excursion Ratio (802.11ac-CH 106)



Peak Excursion Ratio (802.11ac-CH 138)

8.6 FREQUENCY STABILITY.

The EUT was placed inside an environmental chamber as the temperature in the chamber was varied between -30 °C and 50 °C. The temperature was incremented by 10 °C intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

20 MHz BW

OPERATING BAND: UNII Band 1

OPERATING FREQUENCY: 5,180,000,000 Hz

CHANNEL: 36

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5 180 027.50	27.50
100%		-30	5 180 047.56	47.56
100%		-20	5 180 042.65	42.65
100%		-10	5 180 040.67	40.67
100%		0	5 180 035.61	35.61
100%		10	5 180 032.58	32.58
100%		30	5 180 026.95	26.95
100%		40	5 180 024.72	24.72
100%		50	5 180 016.78	16.78
115%	4.37	20	5 180 027.64	27.64
Batt. Endpoint	3.50	20	5 180 025.54	25.54

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 2

OPERATING FREQUENCY: 5,260,000,000 Hz

CHANNEL: 52

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5 260 057.47	57.47
100%		-30	5 260 091.65	91.65
100%		-20	5 260 069.64	69.64
100%		-10	5 260 062.31	62.31
100%		0	5 260 060.45	60.45
100%		+10	5 260 058.12	58.12
100%		+30	5 260 056.86	56.86
100%		+40	5 260 052.67	52.67
100%		+50	5 260 050.11	50.11
115%	4.37	+20	5 260 056.98	56.98
Batt. Endpoint	3.50	+20	5 260 057.21	57.21

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 3

OPERATING FREQUENCY: 5,550,000,000 Hz

CHANNEL: 100

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5 500 055.28	55.28
100%		-30	5 500 089.64	89.64
100%		-20	5 500 067.29	67.29
100%		-10	5 500 063.1	63.1
100%		0	5 500 059.97	59.97
100%		+10	5 500 056.44	56.44
100%		+30	5 500 054.46	54.46
100%		+40	5 500 050.78	50.78
100%		+50	5 500 048.65	48.65
115%	4.37	+20	5 500 053.91	53.91
Batt. Endpoint	3.50	+20	5 500 054.89	54.89

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

40 MHz BW

OPERATING BAND: UNII Band 1

OPERATING FREQUENCY: 5,190,000,000 Hz

CHANNEL: 38

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5 190 043.00	43.00
100%		-30	5 190 063.45	63.45
100%		-20	5 190 061.23	61.23
100%		-10	5 190 056.37	56.37
100%		0	5 190 053.96	53.96
100%		+10	5 190 050.31	50.31
100%		+30	5 190 043.21	43.21
100%		+40	5 190 037.33	37.33
100%		+50	5 190 030.67	30.67
115%	4.37	+20	5 190 046.16	46.16
Batt. Endpoint	3.50	+20	5 190 044.64	44.64

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 2

OPERATING FREQUENCY: 5,310,000,000 Hz

CHANNEL: 62

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5 270 034.00	34.00
100%		-30	5 270 059.57	59.57
100%		-20	5 270 056.31	56.31
100%		-10	5 270 046.34	46.34
100%		0	5 270 043.11	43.11
100%		+10	5 270 041.57	41.57
100%		+30	5 270 035.12	35.12
100%		+40	5 270 029.31	29.31
100%		+50	5 270 021.31	21.31
115%	4.37	+20	5 270 032.42	32.42
Batt. Endpoint	3.50	+20	5 270 035.45	35.45

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 3

OPERATING FREQUENCY: 5,510,000,000 Hz

CHANNEL: 102

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5 510 034.50	34.50
100%		-30	5 510 063.57	63.57
100%		-20	5 510 059.87	59.87
100%		-10	5 510 047.93	47.93
100%		0	5 510 045.23	45.23
100%		+10	5 510 034.68	34.68
100%		+30	5 510 024.48	24.48
100%		+40	5 510 014.32	14.32
100%		+50	5 510 006.94	6.94
115%	4.37	+20	5 510 037.83	37.83
Batt. Endpoint	3.50	+20	5 510 036.12	36.12

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

80 MHz BW

OPERATING BAND: UNII Band 1

OPERATING FREQUENCY: 5,210,000,000 Hz

CHANNEL: 42

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5 210 031.00	31.00
100%		-30	5 210 051.57	51.57
100%		-20	5 210 049.35	49.35
100%		-10	5 210 046.76	46.76
100%		0	5 210 039.58	39.58
100%		+10	5 210 038.64	38.64
100%		+30	5 210 031.21	31.21
100%		+40	5 210 026.44	26.44
100%		+50	5 210 022.16	22.16
115%	4.37	+20	5 210 032.42	32.42
Batt. Endpoint	3.50	+20	5 210 031.98	31.98

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 2

OPERATING FREQUENCY: 5,290,000,000 Hz

CHANNEL: 58

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5 290 036.50	36.50
100%		-30	5 290 055.87	55.87
100%		-20	5 290 053.12	53.12
100%		-10	5 290 049.31	49.31
100%		0	5 290 043.63	43.63
100%		+10	5 290 041.36	41.36
100%		+30	5 290 036.67	36.67
100%		+40	5 290 029.44	29.44
100%		+50	5 290 020.97	20.97
115%	4.37	+20	5 290 036.77	36.77
Batt. Endpoint	3.50	+20	5 290 037.54	37.54

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

OPERATING BAND: UNII Band 3

OPERATING FREQUENCY: 5,530,000,000 Hz

CHANNEL: 106

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.80	+20(Ref)	5 530 033.50	33.50
100%		-30	5 530 054.17	54.17
100%		-20	5 530 052.44	52.44
100%		-10	5 530 049.06	49.06
100%		0	5 530 041.64	41.64
100%		+10	5 530 040.16	40.16
100%		+30	5 530 032.14	32.14
100%		+40	5 530 028.18	28.18
100%		+50	5 530 018.46	18.46
115%	4.37	+20	5 530 035.43	35.43
Batt. Endpoint	3.50	+20	5 530 034.64	34.64

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

8.7 RADIATED MEASUREMENT.

8.7.1 RADIATED SPURIOUS EMISSIONS.

Test Requirements and limit, §15.205, §15.209, §15.407

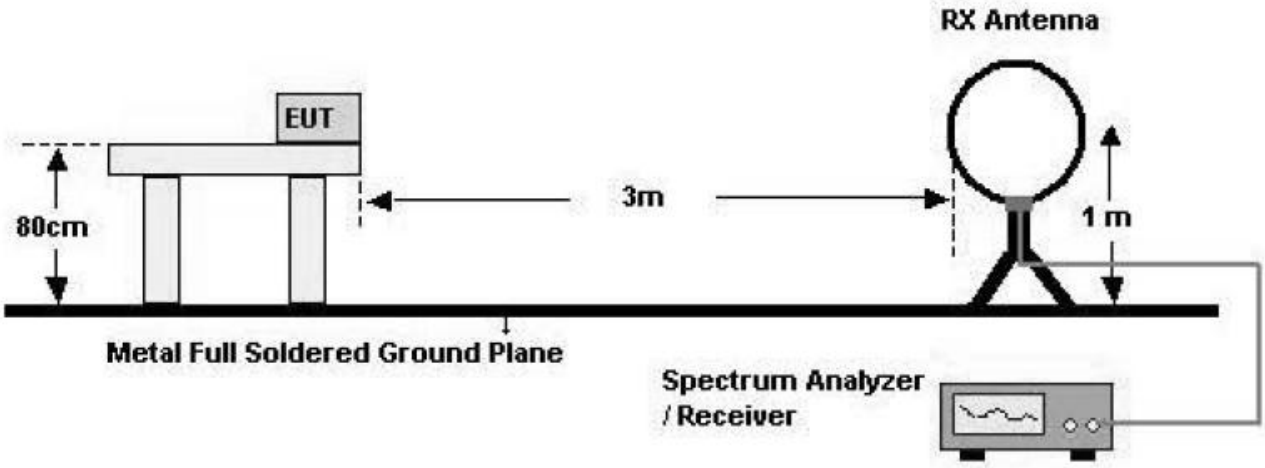
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

▣ §15.407, KDB 789033

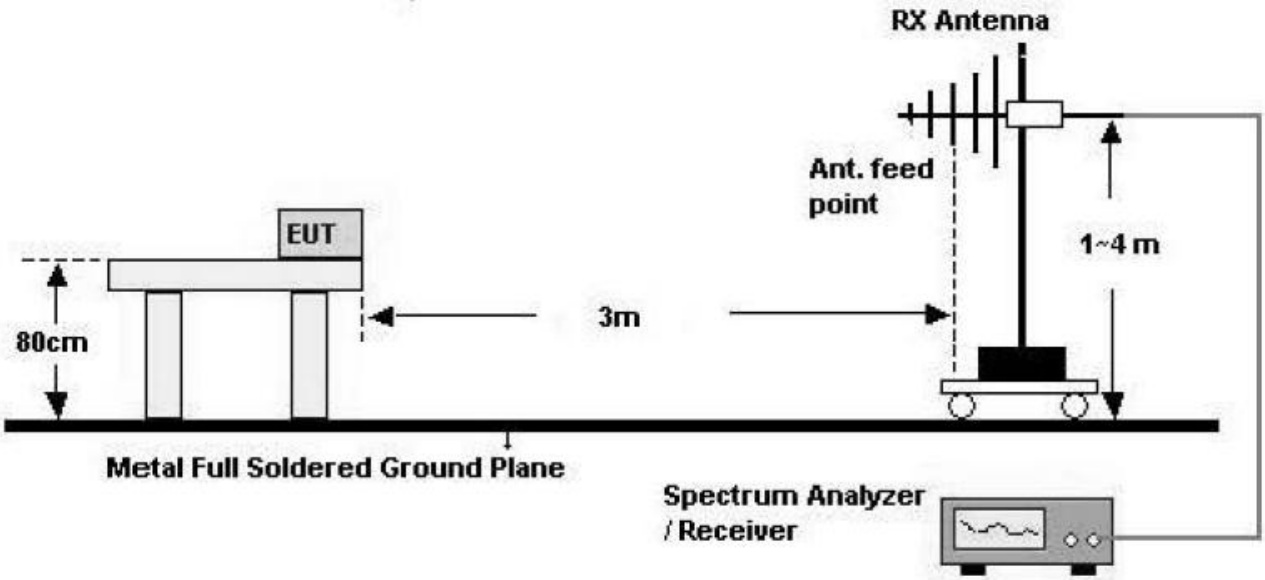
All harmonics that do not lie in a restricted band are subject to a peak limit of -27 dBm/MHz. At a distance of 3 meters the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2 dB to the EIRP limit of -27 dBm/MHz to obtain the limit for out of band spurious emissions of 68.2 dBμV/m.

Test Configuration

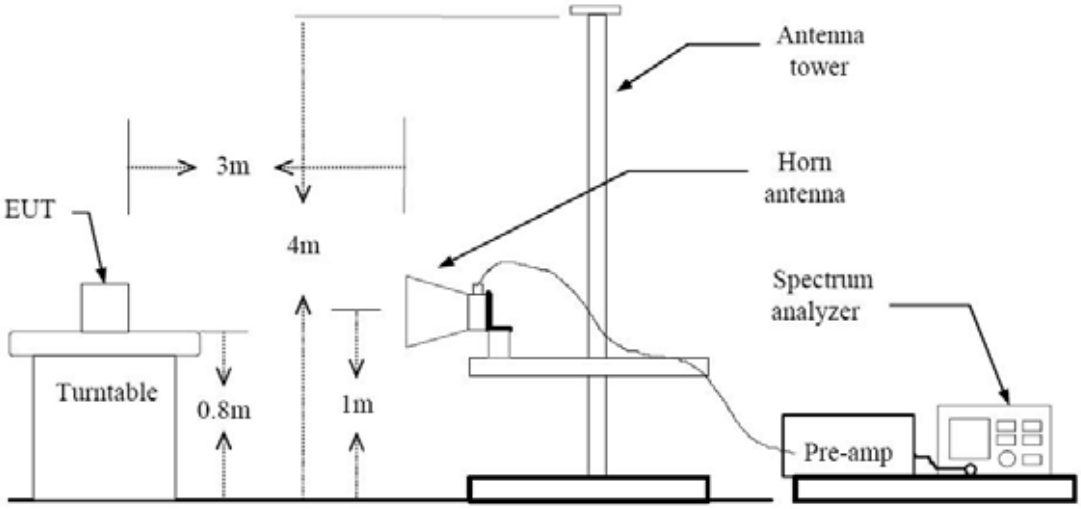
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



TEST PROCEDURE USED

ANSI C63.4(2003)

Method H)5) in KDB 789033, issued 04/08/2013 (Peak)

Method H)6)d) in KDB 789033, issued 04/08/2013 (Average)

. Spectrum setting:

- Peak.

1. RBW = 1 MHz
2. VBW ≥ 3 MHz
3. Detector = Peak
4. Sweep Time = auto
5. Trace mode = max hold
6. Allow sweeps to continue until the trace stabilizes.
7. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle.

- Average (Method VB :Averaging using reduced video bandwidth)

1. RBW = 1 MHz
2. VBW
   2.1. If the EUT is configured to transmit with duty cycle ≥ 98 percent, set VBW ≤ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
   2.2. If the EUT duty cycle is < 98 percent, set VBW ≥ 1/T, where T is the minimum transmission duration.
3. The analyzer is set to linear detector mode.
4. Detector = Peak.

5. Sweep time = auto.
6. Trace mode = max hold.
7. Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimym number of traces by a factor of 1/x, where x is the duty cycle.

Note :

1. We used the case 2 for 802.11a/n_20/n_40/ac_20/ac_40/ac_80 to perform the average filed strength measurements for RSE and radiated band edge test.
2. The actual setting value of VBW for 802.11a/n_20/n_40/ac_20/ac_40/ac_80.
3. We applied the 15.407 for Ch.144, 142 and 138 in 802.11ac according to KDB 644545 D01 v01r01.

Mode	Worst Data rate (Mbps)	T_{on} (ms)	T_{total} (ms)	Duty Cycle (%)	VBW(1/T) (Hz)	The actual setting value of VBW (Hz)
a	6	2.060	2.165	95.15	485	1000
n_20	6.5	1.917	2.019	94.95	522	1000
n_40	13.5	0.942	1.044	90.23	1062	3000
ac_20	6.5	1.926	2.031	94.83	519	1000
ac_40	13.5	0.951	1.053	90.00	1052	3000
ac_80	29.3	0.459	0.560	81.96	2179	3000

TEST RESULTS

9 kHz – 30MHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
㎒	dBμV	dB /m	dB	(H/V)	dBμV/m	dBμV/m	dB
No Critical peaks found							

Notes:

1. Measuring frequencies from 9 kHz to the 30MHz.
2. The reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
3. Distance extrapolation factor = 40 log (specific distance / test distance) (dB)
4. Limit line = specific Limits (dBuV) + Distance extrapolation factor
5. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

TEST RESULTS

Below 1 GHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
㎒	dBμV	dB /m	dB	(H/V)	dBμV/m	dBμV/m	dB
No Critical peaks found							

Notes:

1. Measuring frequencies from 30 MHz to the 1 GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Above 1 GHz

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10360	40.39	9.33	V	49.72	68.20	18.48	PK
15540	45.09	14.61	V	59.70	73.98	14.28	PK
15540	31.48	14.61	V	46.09	53.98	7.89	AV
10360	40.48	9.33	H	49.81	68.20	18.39	PK
15540	45.11	14.61	H	59.72	73.98	14.26	PK
15540	31.51	14.61	H	46.12	53.98	7.86	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10400	40.02	10.13	V	50.15	68.20	18.05	PK
15600	45.06	14.60	V	59.66	73.98	14.32	PK
15600	31.64	14.60	V	46.24	53.98	7.74	AV
10400	40.04	10.13	H	50.17	68.20	18.03	PK
15600	45.12	14.60	H	59.72	73.98	14.26	PK
15600	31.66	14.60	H	46.26	53.98	7.72	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10480	40.28	10.20	V	50.48	68.20	17.72	PK
15720	46.78	13.47	V	60.25	73.98	13.73	PK
15720	32.69	13.47	V	46.16	53.98	7.82	AV
10480	40.34	10.20	H	50.54	68.20	17.66	PK
15720	46.83	13.47	H	60.30	73.98	13.68	PK
15720	32.73	13.47	H	46.20	53.98	7.78	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10360	39.85	9.33	V	49.18	68.20	19.02	PK
15540	44.49	14.61	V	59.10	73.98	14.88	PK
15540	31.31	14.61	V	45.92	53.98	8.06	AV
10360	39.92	9.33	H	49.25	68.20	18.95	PK
15540	44.51	14.61	H	59.12	73.98	14.86	PK
15540	31.32	14.61	H	45.93	53.98	8.05	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10400	40.14	10.13	V	50.27	68.20	17.93	PK
15600	45.13	14.60	V	59.73	73.98	14.25	PK
15600	31.57	14.60	V	46.17	53.98	7.81	AV
10400	40.17	10.13	H	50.30	68.20	17.90	PK
15600	45.16	14.60	H	59.76	73.98	14.22	PK
15600	31.58	14.60	H	46.18	53.98	7.80	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10480	40.31	10.20	V	50.51	68.20	17.69	PK
15720	45.93	13.47	V	59.40	73.98	14.58	PK
15720	32.69	13.47	V	46.16	53.98	7.82	AV
10480	40.34	10.20	H	50.54	68.20	17.66	PK
15720	45.95	13.47	H	59.42	73.98	14.56	PK
15720	32.71	13.47	H	46.18	53.98	7.80	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10360	39.59	9.33	V	48.92	68.20	19.28	PK
15540	44.67	14.61	V	59.28	73.98	14.70	PK
15540	31.24	14.61	V	45.85	53.98	8.13	AV
10360	39.61	9.33	H	48.94	68.20	19.26	PK
15540	44.68	14.61	H	59.29	73.98	14.69	PK
15540	31.25	14.61	H	45.86	53.98	8.12	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10400	40.00	10.13	V	50.13	68.20	18.07	PK
15600	44.88	14.60	V	59.48	73.98	14.50	PK
15600	31.48	14.60	V	46.08	53.98	7.90	AV
10400	40.03	10.13	H	50.16	68.20	18.04	PK
15600	44.91	14.60	H	59.51	73.98	14.47	PK
15600	31.49	14.60	H	46.09	53.98	7.89	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10480	40.17	10.20	V	50.37	68.20	17.83	PK
15720	45.89	13.47	V	59.36	73.98	14.62	PK
15720	32.59	13.47	V	46.06	53.98	7.92	AV
10480	40.21	10.20	H	50.41	68.20	17.79	PK
15720	45.91	13.47	H	59.38	73.98	14.60	PK
15720	32.61	13.47	H	46.08	53.98	7.90	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10380	39.49	9.70	V	49.19	68.20	19.01	PK
15570	44.48	14.62	V	59.10	73.98	14.88	PK
15570	31.43	14.62	V	46.05	53.98	7.93	AV
10380	39.51	9.70	H	49.21	68.20	18.99	PK
15570	44.51	14.62	H	59.13	73.98	14.85	PK
15570	31.44	14.62	H	46.06	53.98	7.92	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10460	39.61	10.26	V	49.87	68.20	18.33	PK
15690	46.02	14.33	V	60.35	73.98	13.63	PK
15690	32.47	14.33	V	46.80	53.98	7.18	AV
10460	39.64	10.26	H	49.90	68.20	18.30	PK
15690	46.05	14.33	H	60.38	73.98	13.60	PK
15690	32.48	14.33	H	46.81	53.98	7.17	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10380	40.25	9.70	V	49.95	68.20	18.25	PK
15570	48.55	14.62	V	63.17	73.98	10.81	PK
15570	32.39	14.62	V	47.01	53.98	6.97	AV
10380	40.28	9.70	H	49.98	68.20	18.22	PK
15570	48.57	14.62	H	63.19	73.98	10.79	PK
15570	32.41	14.62	H	47.03	53.98	6.95	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10460	40.10	10.26	V	50.36	68.20	17.84	PK
15690	45.89	14.33	V	60.22	73.98	13.76	PK
15690	32.47	14.33	V	46.80	53.98	7.18	AV
10460	40.12	10.26	H	50.38	68.20	17.82	PK
15690	45.91	14.33	H	60.24	73.98	13.74	PK
15690	32.49	14.33	H	46.82	53.98	7.16	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	UNII 1
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10420	39.50	10.43	V	49.93	68.20	18.27	PK
15630	45.09	14.15	V	59.24	73.98	14.74	PK
15630	32.51	14.15	V	46.66	53.98	7.32	AV
10420	39.53	10.43	H	49.96	68.20	18.24	PK
15630	45.12	14.15	H	59.27	73.98	14.71	PK
15630	32.51	14.15	H	46.66	53.98	7.32	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is 29.3 Mbps in 802.11ac_80 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10520	40.89	10.38	V	51.27	68.20	16.93	PK
15780	46.95	14.38	V	61.33	73.98	12.65	PK
15780	32.59	14.38	V	46.97	53.98	7.01	AV
10520	40.97	10.38	H	51.35	68.20	16.85	PK
15780	46.97	14.38	H	61.35	73.98	12.63	PK
15780	32.65	14.38	H	47.03	53.98	6.95	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10600	40.15	10.39	V	50.54	73.98	23.44	PK
10600	26.33	10.39	V	36.72	53.98	17.26	AV
15900	44.94	14.00	V	58.94	73.98	15.04	PK
15900	31.17	14.00	V	45.17	53.98	8.81	AV
10600	40.18	10.39	H	50.57	73.98	23.41	PK
10600	26.34	10.39	H	36.73	53.98	17.25	AV
15900	44.96	14.00	H	58.96	73.98	15.02	PK
15900	31.18	14.00	H	45.18	53.98	8.80	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10640	40.02	10.50	V	50.52	73.98	23.46	PK
10640	26.47	10.50	V	36.97	53.98	17.01	AV
15960	44.97	14.27	V	59.24	73.98	14.74	PK
15960	30.85	14.27	V	45.12	53.98	8.86	AV
10640	40.09	10.50	H	50.59	73.98	23.39	PK
10640	26.49	10.50	H	36.99	53.98	16.99	AV
15960	44.99	14.27	H	59.26	73.98	14.72	PK
15960	30.86	14.27	H	45.13	53.98	8.85	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10520	39.95	10.38	V	50.33	68.20	17.87	PK
15780	45.63	14.38	V	60.01	73.98	13.97	PK
15780	32.46	14.38	V	46.84	53.98	7.14	AV
10520	39.97	10.38	H	50.35	68.20	17.85	PK
15780	45.66	14.38	H	60.04	73.98	13.94	PK
15780	32.48	14.38	H	46.86	53.98	7.12	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10600	39.34	10.39	V	49.73	73.98	24.25	PK
10600	26.18	10.39	V	36.57	53.98	17.41	AV
15900	44.19	14.00	V	58.19	73.98	15.79	PK
15900	31.01	14.00	V	45.01	53.98	8.97	AV
10600	39.38	10.39	H	49.77	73.98	24.21	PK
10600	26.19	10.39	H	36.58	53.98	17.40	AV
15900	44.22	14.00	H	58.22	73.98	15.76	PK
15900	31.03	14.00	H	45.03	53.98	8.95	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	UNII 2
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10640	39.42	10.50	V	49.92	73.98	24.06	PK
10640	26.37	10.50	V	36.87	53.98	17.11	AV
15960	44.80	14.27	V	59.07	73.98	14.91	PK
15960	30.74	14.27	V	45.01	53.98	8.97	AV
10640	39.45	10.50	H	49.95	73.98	24.03	PK
10640	26.39	10.50	H	36.89	53.98	17.09	AV
15960	44.82	14.27	H	59.09	73.98	14.89	PK
15960	30.75	14.27	H	45.02	53.98	8.96	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10520	40.79	10.38	V	51.17	68.20	17.03	PK
15780	45.36	14.38	V	59.74	73.98	14.24	PK
15780	32.46	14.38	V	46.84	53.98	7.14	AV
10520	40.81	10.38	H	51.19	68.20	17.01	PK
15780	45.39	14.38	H	59.77	73.98	14.21	PK
15780	32.47	14.38	H	46.85	53.98	7.13	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10600	39.81	10.39	V	50.20	73.98	23.78	PK
10600	26.01	10.39	V	36.40	53.98	17.58	AV
15900	44.51	14.00	V	58.51	73.98	15.47	PK
15900	30.90	14.00	V	44.90	53.98	9.08	AV
10600	39.85	10.39	H	50.24	73.98	23.74	PK
10600	26.09	10.39	H	36.48	53.98	17.50	AV
15900	44.57	14.00	H	58.57	73.98	15.41	PK
15900	30.92	14.00	H	44.92	53.98	9.06	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10640	39.58	10.50	V	50.08	73.98	23.90	PK
10640	26.31	10.50	V	36.81	53.98	17.17	AV
15960	44.71	14.27	V	58.98	73.98	15.00	PK
15960	30.62	14.27	V	44.89	53.98	9.09	AV
10640	39.61	10.50	H	50.11	73.98	23.87	PK
10640	26.33	10.50	H	36.83	53.98	17.15	AV
15960	44.73	14.27	H	59.00	73.98	14.98	PK
15960	30.63	14.27	H	44.90	53.98	9.08	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10540	39.87	10.55	V	50.42	68.20	17.78	PK
15810	45.21	14.26	V	59.47	73.98	14.51	PK
15810	32.18	14.26	V	46.44	53.98	7.54	AV
10540	39.89	10.55	H	50.44	68.20	17.76	PK
15810	45.23	14.26	H	59.49	73.98	14.49	PK
15810	32.18	14.26	H	46.44	53.98	7.54	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10620	39.28	10.25	V	49.53	73.98	24.45	PK
10620	26.21	10.25	V	36.46	53.98	17.52	AV
15930	43.85	13.62	V	57.47	73.98	16.51	PK
15930	30.65	13.62	V	44.27	53.98	9.71	AV
10620	39.31	10.25	H	49.56	73.98	24.42	PK
10620	26.22	10.25	H	36.47	53.98	17.51	AV
15930	43.86	13.62	H	57.48	73.98	16.50	PK
15930	30.66	13.62	H	44.28	53.98	9.70	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10540	40.16	10.55	V	50.71	68.20	17.49	PK
15810	45.19	14.26	V	59.45	73.98	14.53	PK
15810	32.06	14.26	V	46.32	53.98	7.66	AV
10540	40.18	10.55	H	50.73	68.20	17.47	PK
15810	45.22	14.26	H	59.48	73.98	14.50	PK
15810	32.09	14.26	H	46.35	53.98	7.63	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10620	39.08	10.25	V	49.33	73.98	24.65	PK
10620	26.20	10.25	V	36.45	53.98	17.53	AV
15930	44.11	13.62	V	57.73	73.98	16.25	PK
15930	30.82	13.62	V	44.44	53.98	9.54	AV
10620	39.11	10.25	H	49.36	73.98	24.62	PK
10620	26.22	10.25	H	36.47	53.98	17.51	AV
15930	44.14	13.62	H	57.76	73.98	16.22	PK
15930	30.84	13.62	H	44.46	53.98	9.52	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

.

Band :	UNII 2
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10580	40.00	10.42	V	50.42	68.20	17.78	PK
15870	44.59	13.96	V	58.55	73.98	15.43	PK
15870	31.85	13.96	V	45.81	53.98	8.17	AV
10580	40.05	10.42	H	50.47	68.20	17.73	PK
15870	44.62	13.96	H	58.58	73.98	15.40	PK
15870	31.86	13.96	H	45.82	53.98	8.16	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is 13.5 Mbps in 802.11ac_80 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11000	38.91	11.28	V	50.19	73.98	23.79	PK
11000	25.65	11.28	V	36.93	53.98	17.05	AV
16500	45.41	14.19	V	59.60	68.20	8.60	PK
11000	38.93	11.28	H	50.21	73.98	23.77	PK
11000	25.66	11.28	H	36.94	53.98	17.04	AV
16500	45.42	14.19	H	59.61	68.20	8.59	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5580 MHz
Channel No.	116 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11160	38.63	11.10	V	49.73	73.98	24.25	PK
11160	25.21	11.10	V	36.31	53.98	17.67	AV
16740	45.98	15.70	V	61.68	68.20	6.52	PK
11160	38.65	11.10	H	49.75	73.98	24.23	PK
11160	25.23	11.10	H	36.33	53.98	17.65	AV
16740	46.03	15.70	H	61.73	68.20	6.47	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11440	38.69	10.97	V	49.66	73.98	24.32	PK
11440	25.16	10.97	V	36.13	53.98	17.85	AV
17160	43.77	17.82	V	61.59	68.20	6.61	PK
11440	38.71	10.97	H	49.68	73.98	24.30	PK
11440	25.18	10.97	H	36.15	53.98	17.83	AV
17160	43.81	17.82	H	61.63	68.20	6.57	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11a. Worst case is 6 Mbps in 802.11a.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11000	39.17	11.28	V	50.45	73.98	23.53	PK
11000	25.60	11.28	V	36.88	53.98	17.10	AV
16500	45.33	14.19	V	59.52	68.20	8.68	PK
11000	39.19	11.28	H	50.47	73.98	23.51	PK
11000	25.61	11.28	H	36.89	53.98	17.09	AV
16500	45.35	14.19	H	59.54	68.20	8.66	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5580 MHz
Channel No.	116 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11160	38.42	11.10	V	49.52	73.98	24.46	PK
11160	25.20	11.10	V	36.30	53.98	17.68	AV
16740	45.14	15.70	V	60.84	68.20	7.36	PK
11160	38.45	11.10	H	49.55	73.98	24.43	PK
11160	25.21	11.10	H	36.31	53.98	17.67	AV
16740	45.16	15.70	H	60.86	68.20	7.34	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11440	38.39	10.97	V	49.36	73.98	24.62	PK
11440	25.13	10.97	V	36.10	53.98	17.88	AV
17160	43.38	17.82	V	61.20	68.20	7.00	PK
11440	38.41	10.97	H	49.38	73.98	24.60	PK
11440	25.14	10.97	H	36.11	53.98	17.87	AV
17160	43.41	17.82	H	61.23	68.20	6.97	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_20 MHz BW. Worst case is 6.5 Mbps in 802.11n_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11000	38.83	11.28	V	50.11	73.98	23.87	PK
11000	25.41	11.28	V	36.69	53.98	17.29	AV
16500	45.42	14.19	V	59.61	68.20	8.59	PK
11000	38.86	11.28	H	50.14	73.98	23.84	PK
11000	25.42	11.28	H	36.70	53.98	17.28	AV
16500	45.46	14.19	H	59.65	68.20	8.55	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

.

Band :	UNII 2e
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5580 MHz
Channel No.	116 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11160	39.00	11.10	V	50.10	73.98	23.88	PK
11160	25.28	11.10	V	36.38	53.98	17.60	AV
16740	44.80	15.70	V	60.50	68.20	7.70	PK
11160	39.03	11.10	H	50.13	73.98	23.85	PK
11160	25.29	11.10	H	36.39	53.98	17.59	AV
16740	44.82	15.70	H	60.52	68.20	7.68	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11440	38.87	10.97	V	49.84	73.98	24.14	PK
11440	25.11	10.97	V	36.08	53.98	17.90	AV
17160	44.18	17.82	V	62.00	68.20	6.20	PK
11440	38.91	10.97	H	49.88	73.98	24.10	PK
11440	25.12	10.97	H	36.09	53.98	17.89	AV
17160	44.21	17.82	H	62.03	68.20	6.17	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_20 MHz BW. Worst case is 6.5 Mbps in 802.11ac_20 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. We applied the 15.407 for Ch.144 in 802.11ac according to KDB 644545 D01 v01r01.

Band :	UNII 2e
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11020	39.00	11.28	V	50.28	73.98	23.70	PK
11020	25.63	11.28	V	36.91	53.98	17.07	AV
16530	45.17	14.83	V	60.00	68.20	8.20	PK
11020	39.04	11.28	H	50.32	73.98	23.66	PK
11020	25.64	11.28	H	36.92	53.98	17.06	AV
16530	45.21	14.83	H	60.04	68.20	8.16	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5590 MHz
Channel No.	118 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11180	38.63	11.12	V	49.75	73.98	24.23	PK
11180	25.39	11.12	V	36.51	53.98	17.47	AV
16770	44.61	16.52	V	61.13	68.20	7.07	PK
11180	38.66	11.12	H	49.78	73.98	24.20	PK
11180	25.41	11.12	H	36.53	53.98	17.45	AV
16770	44.65	16.52	H	61.17	68.20	7.03	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

.

Band :	UNII 2e
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5710 MHz
Channel No.	142 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11420	38.92	10.73	V	49.65	73.98	24.33	PK
11420	25.00	10.73	V	35.73	53.98	18.25	AV
17130	43.47	18.11	V	61.58	68.20	6.62	PK
11420	38.96	10.73	H	49.69	73.98	24.29	PK
11420	25.04	10.73	H	35.77	53.98	18.21	AV
17130	43.49	18.11	H	61.60	68.20	6.60	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11n_40 MHz BW. Worst case is 13.5 Mbps in 802.11n_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11020	38.94	11.28	V	50.22	73.98	23.76	PK
11020	25.61	11.28	V	36.89	53.98	17.09	AV
16530	45.62	14.83	V	60.45	68.20	7.75	PK
11020	38.96	11.28	H	50.24	73.98	23.74	PK
11020	25.62	11.28	H	36.90	53.98	17.08	AV
16530	45.65	14.83	H	60.48	68.20	7.72	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5590 MHz
Channel No.	118 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11180	52.41	11.12	V	63.53	73.98	10.45	PK
11180	36.35	11.12	V	47.47	53.98	6.51	AV
16770	44.95	16.52	V	61.47	68.20	6.73	PK
11180	52.43	11.12	H	63.55	73.98	10.43	PK
11180	36.37	11.12	H	47.49	53.98	6.49	AV
16770	44.96	16.52	H	61.48	68.20	6.72	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11ac_40 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5710 MHz
Channel No.	142 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11420	39.39	10.73	V	50.12	73.98	23.86	PK
11420	25.11	10.73	V	35.84	53.98	18.14	AV
17130	43.08	18.11	V	61.19	68.20	7.01	PK
11420	39.41	10.73	H	50.14	73.98	23.84	PK
11420	25.12	10.73	H	35.85	53.98	18.13	AV
17130	43.11	18.11	H	61.22	68.20	6.98	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_40 MHz BW. Worst case is 13.5 Mbps in 802.11ac_40 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. We applied the 15.407 for Ch.142 in 802.11ac according to KDB 644545 D01 v01r01.

Band :	UNII 2e
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5530 MHz
Channel No.	106 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11060	39.11	11.48	V	50.59	73.98	23.39	PK
11060	26.22	11.48	V	37.70	53.98	16.28	AV
16590	44.94	14.42	V	59.36	68.20	8.84	PK
11060	39.15	11.48	H	50.63	73.98	23.35	PK
11060	26.24	11.48	H	37.72	53.98	16.26	AV
16590	44.98	14.42	H	59.40	68.20	8.80	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is 13.5 Mbps in 802.11ac_80 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11ac_80 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5690 MHz
Channel No.	138 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11380	38.89	11.05	V	49.94	73.98	24.04	PK
11380	25.55	11.05	V	36.60	53.98	17.38	AV
17070	43.11	18.08	V	61.19	68.20	7.01	PK
11380	38.91	11.05	H	49.96	73.98	24.02	PK
11380	25.57	11.05	H	36.62	53.98	17.36	AV
17070	43.13	18.08	H	61.21	68.20	6.99	PK

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done all data rate in 802.11ac_80 MHz BW. Worst case is 13.5 Mbps in 802.11ac_80 MHz BW.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna
7. We applied the 15.407 for Ch.138 in 802.11ac according to KDB 644545 D01 v01r01.

8.7.2 RADIATED RESTRICTED BAND EDGE MEASUREMENTS

Test Requirements and limit, §15.247(d) §15.205, §15.209

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a) (See section 15.205(c)).

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	57.78	-0.51	H	57.27	73.98	16.71	PK
5150	42.25	-0.51	H	41.74	53.98	12.24	AV
5150	58.35	-0.51	V	57.84	73.98	16.14	PK
5150	43.17	-0.51	V	42.66	53.98	11.32	AV

Band :	UNII 1
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	65.08	-0.51	H	64.57	73.98	9.41	PK
5150	42.84	-0.51	H	42.33	53.98	11.65	AV
5150	65.56	-0.51	V	65.05	73.98	8.93	PK
5150	43.60	-0.51	V	43.09	53.98	10.89	AV

Band :	UNII 1
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	63.19	-0.51	H	62.68	73.98	11.30	PK
5150	42.03	-0.51	H	41.52	53.98	12.46	AV
5150	63.28	-0.51	V	62.77	73.98	11.21	PK
5150	42.66	-0.51	V	42.15	53.98	11.83	AV

Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	65.23	-0.51	H	64.72	73.98	9.26	PK
5150	48.59	-0.51	H	48.08	53.98	5.90	AV
5150	65.74	-0.51	V	65.23	73.98	8.75	PK
5150	49.22	-0.51	V	48.71	53.98	5.27	AV

Band :	UNII 1
Operation Mode:	802.11 ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	65.23	-0.51	H	64.72	73.98	9.26	PK
5150	48.21	-0.51	H	47.7	53.98	6.28	AV
5150	65.27	-0.51	V	64.76	73.98	9.22	PK
5150	48.72	-0.51	V	48.21	53.98	5.77	AV

Band :	UNII 1
Operation Mode:	802.11 ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	66.46	-0.51	H	65.95	73.98	8.03	PK
5150	50.79	-0.51	H	50.28	53.98	3.70	AV
5150	66.80	-0.51	V	66.29	73.98	7.69	PK
5150	51.13	-0.51	V	50.62	53.98	3.36	AV

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	56.25	-0.19	H	56.06	73.98	17.92	PK
5350	38.39	-0.19	H	38.2	53.98	15.78	AV
5350	56.77	-0.19	V	56.58	73.98	17.40	PK
5350	39.40	-0.19	V	39.21	53.98	14.77	AV

Band :	UNII 2
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	59.04	-0.19	H	58.85	73.98	15.13	PK
5350	38.58	-0.19	H	38.39	53.98	15.59	AV
5350	59.47	-0.19	V	59.28	73.98	14.70	PK
5350	39.32	-0.19	V	39.13	53.98	14.85	AV

Band :	UNII 2
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5320 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	57.86	-0.19	H	57.67	73.98	16.31	PK
5350	39.01	-0.19	H	38.82	53.98	15.16	AV
5350	58.03	-0.19	V	57.84	73.98	16.14	PK
5350	39.15	-0.19	V	38.96	53.98	15.02	AV

Band :	UNII 2
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	59.47	-0.19	H	59.28	73.98	14.70	PK
5350	40.21	-0.19	H	40.02	53.98	13.96	AV
5350	59.85	-0.19	V	59.66	73.98	14.32	PK
5350	40.98	-0.19	V	40.79	53.98	13.19	AV

Band :	UNII 2
Operation Mode:	802.11 ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	58.89	-0.19	H	58.70	73.98	15.28	PK
5350	40.01	-0.19	H	39.82	53.98	14.16	AV
5350	58.97	-0.19	V	58.78	73.98	15.20	PK
5350	40.21	-0.19	V	40.02	53.98	13.96	AV

Band :	UNII 2
Operation Mode:	802.11 ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	51.56	-0.19	H	51.37	73.98	22.61	PK
5350	41.02	-0.19	H	40.83	53.98	13.15	AV
5350	61.87	-0.19	V	61.68	73.98	12.30	PK
5350	41.28	-0.19	V	41.09	53.98	12.89	AV

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2e
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	51.64	0.38	H	52.02	73.98	21.96	PK
5460	37.59	0.38	H	37.97	53.98	16.01	AV
*5470	55.78	0.24	H	56.02	68.20	12.18	PK
5460	52.01	0.38	V	52.39	73.98	21.59	PK
5460	38.44	0.38	V	38.82	53.98	15.16	AV
*5470	55.80	0.24	V	56.04	68.20	12.16	PK

Band :	UNII 2e
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	52.71	0.38	H	53.09	73.98	20.89	PK
5460	37.86	0.38	H	38.24	53.98	15.74	AV
*5470	58.24	0.24	H	58.48	68.20	9.72	PK
5460	52.95	0.38	V	53.33	73.98	20.65	PK
5460	38.47	0.38	V	38.85	53.98	15.13	AV
*5470	58.51	0.24	V	58.75	68.20	9.45	PK

Band :	UNII 2e
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	52.37	0.38	H	52.75	73.98	21.23	PK
5460	38.16	0.38	H	38.54	53.98	15.44	AV
*5470	57.55	0.24	H	57.79	68.20	10.41	PK
5460	52.54	0.38	V	52.92	73.98	21.06	PK
5460	38.28	0.38	V	38.66	53.98	15.32	AV
*5470	57.68	0.24	V	57.92	68.20	10.28	PK

Band :	UNII 2e
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	52.98	0.38	H	53.36	73.98	20.62	PK
5460	38.06	0.38	H	38.44	53.98	15.54	AV
*5470	59.84	0.24	H	60.08	68.20	8.12	PK
5460	53.34	0.38	V	53.72	73.98	20.26	PK
5460	38.64	0.38	V	39.02	53.98	14.96	AV
*5470	60.09	0.24	V	60.33	68.20	7.87	PK

Band :	UNII 2e
Operation Mode:	802.11 ac_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	52.71	0.38	H	53.09	73.98	20.89	PK
5460	38.06	0.38	H	38.44	53.98	15.54	AV
*5470	56.88	0.24	H	57.12	68.20	11.08	PK
5460	52.74	0.38	V	53.12	73.98	20.86	PK
5460	38.52	0.38	V	38.9	53.98	15.08	AV
*5470	56.91	0.24	V	57.15	68.20	11.05	PK

Band :	UNII 2e
Operation Mode:	802.11 ac_80 MHz BW
Transfer Rate:	29.3 Mbps
Operating Frequency	5530 MHz
Channel No.	106 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	58.59	0.38	H	58.97	73.98	15.01	PK
5460	39.33	0.38	H	39.71	53.98	14.27	AV
*5470	59.82	0.24	H	60.06	68.20	8.14	PK
5460	58.98	0.38	V	59.36	73.98	14.62	PK
5460	39.60	0.38	V	39.98	53.98	14.00	AV
*5470	61.08	0.24	V	61.32	68.20	6.88	PK

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. We have done all data rate in 802.11a/n/ac mode test. . Worst case of EUT is lowest data rate in 802.11a/n/ac
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. '*' is radiated band edge test frequency(not restricted band emissions).

8.8 POWERLINE CONDUCTED EMISSIONS

Test Requirements and limit, §15.207

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference groundplane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.
5. We are performed the AC Power Line Conducted Emission test for 40.5 Mbps, Ch.54 and 802.11n_HT40 mode in UNII 2. Because 802.11n_HT40 mode in UNII 2 is worst case.

▣ RESULT PLOTS

Conducted Emissions (Line 1)

HCT

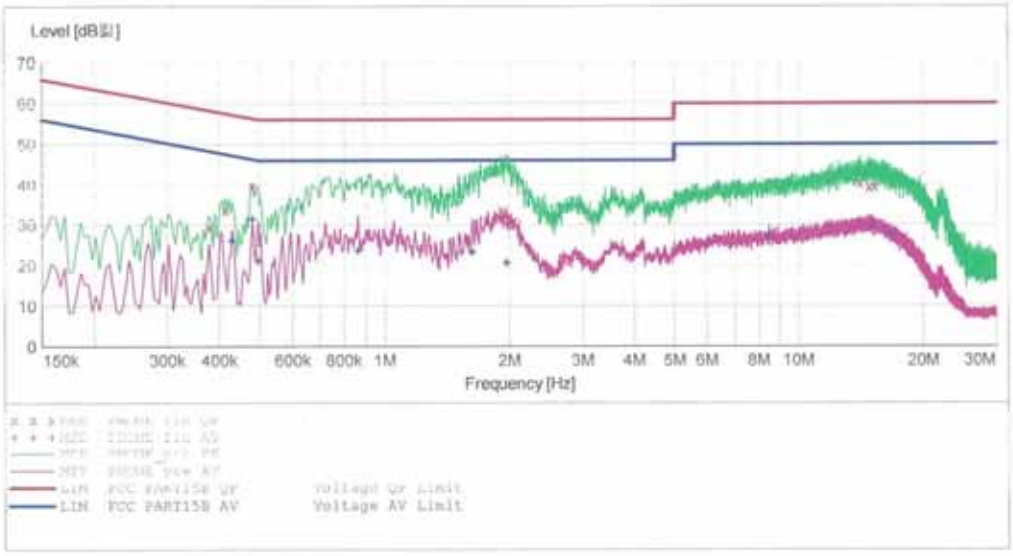
EMC

```
EUT:                    KS1301
Manufacturer:           LG
Operating Condition:    WLAN MODE (UNIT)
Test Site:              SHIELD ROOM
Operator:               JC SHIN
Test Specification:     FCC PART15 B
Comment:                H
```

SCAN TABLE: "FCC CLASS B(H)"

Short Description: KN22 CLASS B

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Banow.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

2013-10-06 8:35오전

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.378001	29.60	9.8	58	28.7	---	---
0.414001	33.80	9.8	58	23.8	---	---
0.482001	39.50	9.8	56	16.8	---	---
1.916000	33.70	9.9	56	22.3	---	---
1.964000	30.60	9.9	56	25.4	---	---
2.056000	31.00	9.9	56	25.0	---	---
14.100000	40.30	10.7	60	19.7	---	---
14.820000	39.30	10.8	60	20.7	---	---
15.208000	39.50	10.8	60	20.5	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

2013-10-06 8:35오전

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.430001	26.10	9.8	47	21.2	---	---
0.462001	31.50	9.8	46	14.8	---	---
0.498001	21.20	9.8	46	24.8	---	---
0.868000	23.70	9.8	46	22.3	---	---
1.632000	23.40	9.9	46	22.6	---	---
1.972000	20.60	9.9	46	25.4	---	---
8.504000	27.40	10.4	50	22.6	---	---
15.020000	29.50	10.8	50	20.5	---	---
16.724000	27.80	10.8	50	22.2	---	---

Page 2/2 2013-10-06 8:35오전 HCT EMC LAB

Conducted Emissions (Line 2)

HCT

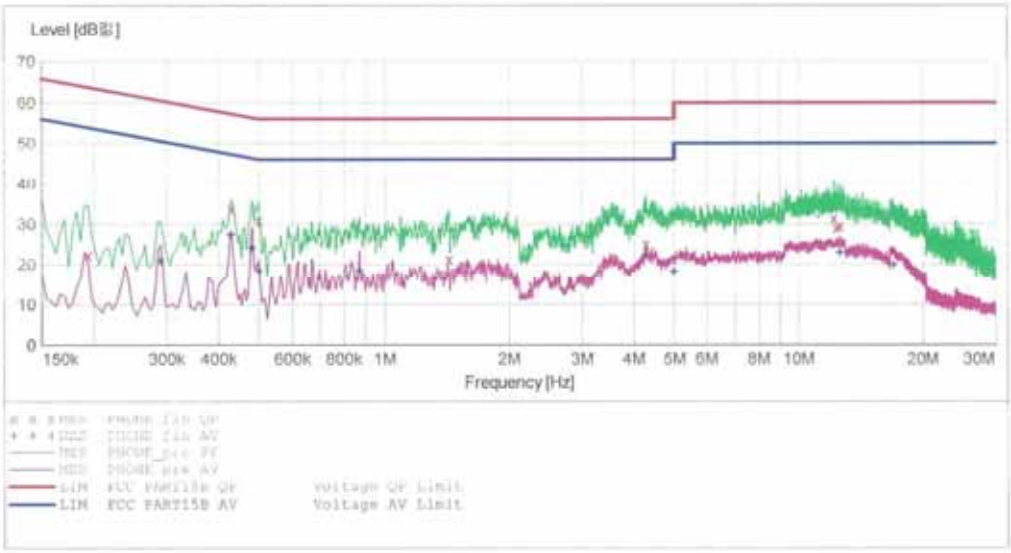
EMC

EUT:	KS1301
Manufacturer:	LG
Operating Condition:	WLAN MODE [UNII]
Test Site:	SHIELD ROOM
Operator:	JC SHIN
Test Specification:	FCC PART15 B
Comment:	N

SCAN TABLE: "FCC CLASS B(N)"

Short Description: KN22 CLASS B

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Banaw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

2013-10-06 8:25오전

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.194001	22.30	10.0	64	41.6	---	---
0.430001	33.90	10.0	57	23.4	---	---
0.500000	30.90	10.0	56	25.1	---	---
1.437000	21.40	10.1	56	34.6	---	---
3.536000	21.90	10.3	56	34.1	---	---
4.284000	25.10	10.3	56	30.9	---	---
12.136000	31.50	10.9	60	28.5	---	---
12.364000	29.20	10.9	60	30.8	---	---
12.608000	29.60	10.9	60	30.4	---	---

Page 1/2 2013-10-06 8:25오전 HCT EMC LAB

MEASUREMENT RESULT: "PHONE_fin AV"

2013-10-06 8:25오전

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.290001	20.90	10.0	51	29.6	---	---
0.430001	27.50	10.0	47	19.8	---	---
0.482001	24.10	10.0	46	22.2	---	---
0.500000	18.50	10.0	46	27.5	---	---
0.872000	18.50	10.0	46	27.5	---	---
4.264000	22.40	10.3	46	23.6	---	---
5.000000	18.20	10.4	46	27.8	---	---
12.584000	22.90	10.9	50	27.1	---	---
16.928000	19.80	11.1	50	30.2	---	---

9. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Interval	Calibration Due	Serial No.
Rohde & Schwarz	ENV216/ LISN	Annual	02/06/2014	100073
Schwarzbeck	VULB 9160/ TRILOG Antenna	Biennial	12/17/2014	3150
Rohde & Schwarz	ESI 40 / EMI TEST RECEIVER	Annual	04/16/2014	831564103
Agilent	E4440A/ Spectrum Analyzer	Annual	04/25/2014	US45303008
Agilent	N9020A/ SIGNAL ANALYZER	Annual	05/14/2014	MY51110063
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
Rohde & Schwarz	SCU-18/ Signal Conditioning Unit	Annual	09/10/2014	10094
MITEQ	AMF-6B-180265-35-10P / POWER AMP	Annual	04/16/2014	667624
CERNEX	CBL26405040 / POWER AMP	Annual	04/16/2014	19660
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	07/05/2015	1151
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	Biennial	10/30/2014	BBHA9170124
Rohde & Schwarz	FSP / Spectrum Analyzer	Annual	02/08/2014	839117/011
Agilent	N1911A /Power Meter	Annual	01/22/2014	MY45100523
Agilent	N1921A /POWER SENSOR	Annual	07/11/2014	MY45241059
Wainwright Instrument	WHF3.0/18G-10EF / High Pass Filter	Annual	02/08/2014	F6
Wainwright Instrument	WHNX6.0/26.5G-6SS / High Pass Filter	Annual	04/16/2014	1
Wainwright Instrument	WHNX7.0/18G-8SS / High Pass Filter	Annual	04/16/2014	29
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject Filter	Annual	03/19/2014	1
Hewlett Packard	11636B/Power Divider	Annual	11/07/2013	11377
Agilent	87300B/Directional Coupler	Annual	12/24/2013	3116A03621
Hewlett Packard	11667B / Power Splitter	Annual	05/29/2014	05001
DIGITAL	EP-3010 /DC POWER SUPPLY	Annual	11/07/2013	3110117
ITECH	IT6720 / DC POWER SUPPLY	Annual	11/07/2013	010002156287001199
TESCOM	TC-3000C / BLUETOOTH TESTER	Annual	04/24/2014	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	Annual	04/25/2014	100422
EMCO	6502.LOOP ANTENNA	Biennial	01/11/2014	9009-2536
CERNEX	CBLU1183540 / POWER AMP	Annual	07/24/2014	21691
Agilent	8493C / Attenuator(10 dB)	Annual	07/24/2014	76649
WEINSCHEL	2-3 / Attenuator(3 dB)	Annual	11/07/2013	BR0617